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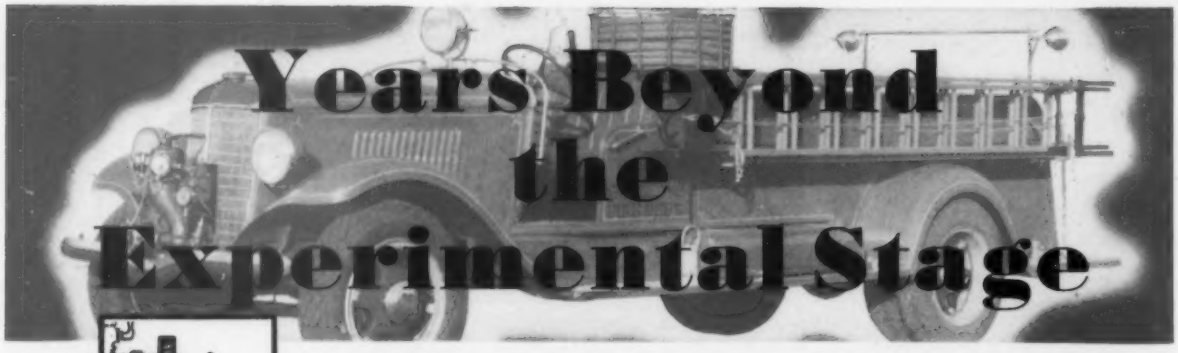
FIRE ENGINEERING

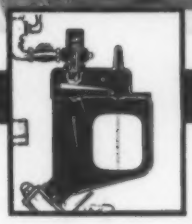
The Journal of the Fire Protection Profession Since 1877

. 88, No. 4 APRIL, 1935 Member A.B.C.—A.B.P.

Unless Checked by Efficient Fire-Fighting Methods, or by the Elements, Brush and Grass Fires May Soon Develop Into Fires Extending Over Large Fronts.

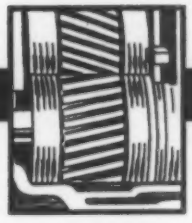


Years Beyond the Experimental Stage



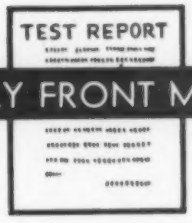
AUTOMATIC PRIMER—PATENTED FEATURE

The Barton Primer is the ONLY PRIMER offered on centrifugal fire pumps that is thoroughly automatic — absolutely dependable. It never requires attention. When pumping from a stream, for instance, you can throw your suction line over the bridge rail and in spite of air pockets in the hose start delivering water immediately and for as long as necessary. We use the positive vacuum of the motor. PLAY SAFE! Fires won't wait while you tinker with a faulty primer.



GEARED DRIVE ASSURES LOW MOTOR SPEEDS

Certainly we use a geared drive! This drive operates the Barton Pump at approximately twice motor speed. Even when delivering water at 250 pounds pressure, MOTOR SPEEDS ARE NOT EXCESSIVE. A motor with throttle wide open is a motor that won't "stand up" very long. Our geared drive protects you against wear and tear of high speeds—against expensive motor overhauls. The Barton drive is dependable. We have never made a single replacement.



ONLY FRONT MOUNTED PUMPS THAT MEET UNDERWRITERS' TESTS

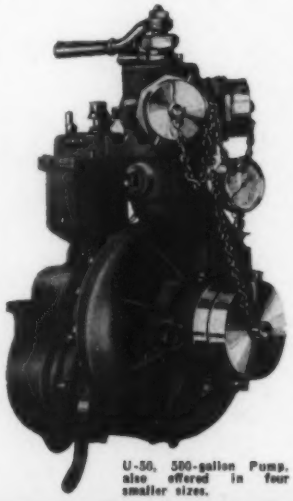
BEWARE! Unless the pumping equipment you purchase meets performance requirements of the National Board of Fire Underwriters and State Rating Bureaus, you cannot expect to lower insurance rates in your community. YOU MUST HAVE A RECOGNIZED PUMP. The Barton is the ONLY fire pump in the front mounted class which has passed Underwriters' Tests.

Today there are Barton Fire Pumps on active duty from coast to coast, and without exception they are a credit to the chiefs who selected them.

The Barton Pump is a finished job. Ten years ago, yes!—but not today is there anything experimental about the Barton.

And that is why we say to you: BEWARE OF IMITATIONS. It took us ten years to give you the quality, stamina and performance found in our 1935 model Barton Fire Pumps. It will take anyone else a long time to offer you something comparable.

Sure it's possible to slap something together overnight or in six months, and call it a fire pump. But do you want that kind of apparatus? Do you want to do the experimental work yourself? Do you want to take a chance that they haven't got all the "bugs" out of their product?



U-50, 500-gallon Pump, also offered in four smaller sizes.

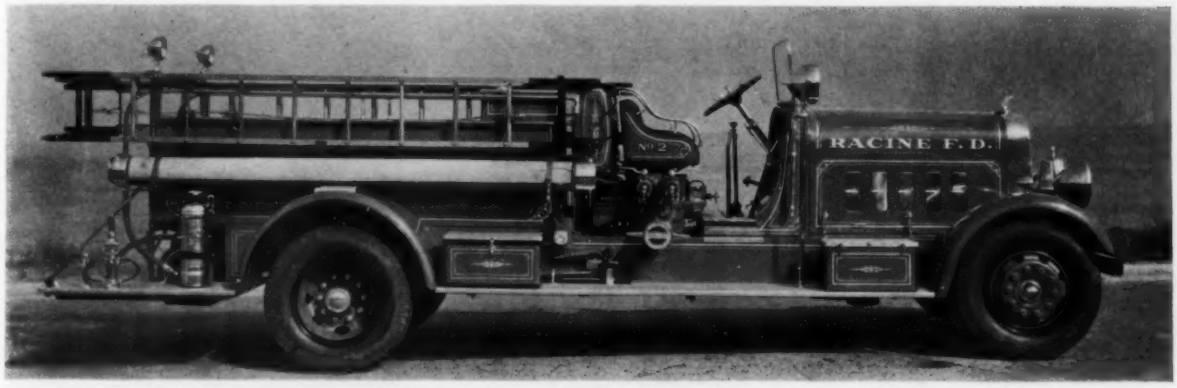
Buying a fire pump, Mr. Chief, is serious business, and your community looks to you for sound advice. Give them good counsel. INSIST UPON A BARTON PUMP! There is no substitute worthy of your consideration.

A Barton Pump can be front mounted on practically any chassis, saving HUNDREDS OF DOLLARS IN COST OF COMPLETE APPARATUS. Write for Bulletin 75 and learn the facts. AMERICAN STEAM PUMP COMPANY, Battle Creek, Mich.

BARTON FIRE PUMPS

PIRSCH BUILDS PUMPERS

MODERN ONES



The 1,000-Gallon Pirsch Triple Combination Pumping Engine

YOU GET

Heat Treated Chrome Frame — Rotary or Centrifugal Pump — 200 Horse Power if Desired — Hydraulic Brakes with Booster — Pirsch Pat. Lapless Ladder — Pirsch Pat. Pulsation Reduction Device — Four-Speed Overdrive Transmission — A Fire Engine of Proper Design and Balance Built by a Firm of Long Experience

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2. Instrument Assembly in Full View of Operator with:
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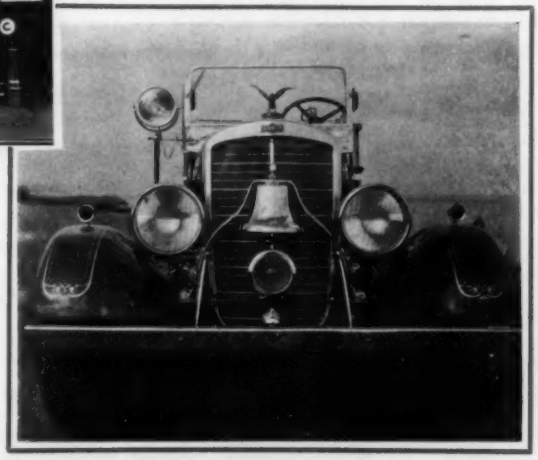
   (b) Tachometer
   (c) Temperature Indicator
   (d) Electric Heater for Gauges
3. Relief Valve, Cooling Line Valve and Booster Tank Filler



Showing the Fighting End of the Pirsch Pumper with Semi-V Type, Modified Streamline Radiator Design

PETER PIRSCH & SONS CO.

KENOSHA, WISCONSIN

A Consolidation of
FIRE AND WATER ENGINEERING
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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

ROBERT H. LOCKWOOD
Associate Editor

FRED SHEPPERD
Editor

N. N. WOLPERT
Assistant Editor

The Awakening

FROM all indications, it looks like the rush to buy new fire fighting equipment is about to get under way. Because of stringent economy measures, fire departments in most cases have been worrying along the past few years without replacements, but things are reaching a point now where they are finding it dangerous to wait any longer under any conditions.

● New York City, for example, plans to buy twenty 1,000 gal. pumpers and twelve 85 ft. aerial trucks, bids for which will be received April 18. The same city also opened bids last week for 162,000 ft. of fire hose, which will be one of the largest single purchases of hose on record. The total cost of this new equipment will probably be in the neighborhood of $600,000. Nothwithstanding its difficult financial situation, New York seems to be finding a way to provide money for things it really needs.

● If we are heading for an inflationary period, —and well-informed opinion seems to feel that we are—equipment prices are bound to show a decided tendency upward. Thus, it should be a wise policy to make needed purchases with as little delay as possible.

The Publishers

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MEMBER
Audit Bureau of Circulations
Associated Business Papers

Published the tenth of each month by
CASE-SHEPPERD-MANN PUBLISHING CORPORATION
Also publishers of "Water Works Engineering" and "Municipal Sanitation"
General Offices—24 West 40th St., New York

SUBSCRIPTION PRICE
U. S., $2 a year; Canada, $2.50
Foreign, $3; Single Copies, 25c

KARL M. MANN, President
I. HERBERT CASE, Vice-Pres. and General Manager
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CHICAGO: 6 N. Michigan Ave.—W. S. CLEVENGER, L. M. ROCHE; SAN FRANCISCO: 1045 Sansome St.—CHARLES H. WOOLLEY

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Entered as second class matter April 15, 1929, at the Post Office at New York, N. Y., under the Act of March 3, 1879.
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"We want Goodyears again"

Fire Chief Zimmerman of Miamisburg, Ohio, speaking. He's talking from experience. He's been using Goodyear Truck Tires. Naturally when he recently bought a new truck he demanded Goodyears. He knows Goodyears give him safe, dependable service. He knows they perform better.

Here's what Chief Zimmerman says in his own words. "When we recently purchased our new Ahrens-Fox quadruple apparatus, we specified Goodyear Truck Tires because of the efficient and dependable service we have received from them on our other equipment. We certainly are very much pleased with Goodyear Tires."

That's the opinion of other Fire Chiefs who have used them, too. And it's no wonder. Goodyears give them the gripping traction of that All-Weather Tread—the strength, durability of Supertwist cord construction—safety and dependability of the utmost.

Put Goodyears on your fire trucks. They'll prove themselves to you, too.

THE GOODYEAR TIRE & RUBBER COMPANY, INC.
AKRON, OHIO

GOODYEAR
TRUCK TIRES

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And they are every bit as outstanding in performance and endurance as they are in price

$1627

All Complete ☞ Including Chassis

500 G.P.M. from Suction
650 G.P.M. from Hydrants
☞ at 120 lb. Pressure.

SPECIFICATIONS:

Champion Pump—Type F4. Complete with Shutoff Valve and Wheel, 2½" outlet with brass cap and chain and 3½" inlet with brass cap and chain. Also equipped with 1½" valve on Booster Outlet and 1½" valve on Booster Inlet. Includes also 300 lb. Pressure Gauge, Automatic Primer, Friction Disc Clutch, Splined Drive Shaft of Chrome Nickel Steel. Drain Cock. Auxiliary Cooling for motor.

Chassis. 1935 Ford V-8. Wheelbase, 157". 82 Horse Power.

Body. All steel construction with straight sides without fender wells or obstructions of any kind in hose bed. Electrically hand welded into one unit for extra strength and durability. Capacity 1500 feet, 2½" hose. Double flooring with special slatted oak top flooring for ventilation.

Booster Tank. Rustless steel, electrically hand welded with recessed filling trough on top for filling with buckets or by hose line from any water supply. Tank, 200 gallon capacity, with surge plates to prevent sloshing.

Booster Tank Connections. Permanent connections from tank to pump booster inlet and from pump booster outlet to swivel joint on reel.

Special Seat. Custom built. Upholstered in good grade waterproofed material.

Suction Hose Channel. Steel, welded integral with body. Carries two or three lengths large suction hose.

Railings. Side, Cross Bar and Step. Solid polished brass with malleable flanges and fittings for extra strength.

Dash Rail. Polished brass and curved gracefully to conform to cowl curve.

Reel. Mounted over tank. Holds 200 feet booster hose.

Ladder Brackets and Locks. Both sides for Extension Ladder and Roof Ladder. Built as shown with 45° flared body ladder channel and spring holders or with straight side body with double U shaped ladder brackets.

Floodlights. Two Fire Dept. Floodlights on rear crossbar. Chrome plated. Universal swivel brackets.

Red Fresnel Lights. Special F. D. flashing type for right of way. Polished chrome finish.

Searchlight. Powerful Fire Apparatus Type. Polished chrome finish. Universal swivel bracket.

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Bell. Special Fire Engine type. Polished Brass.

Siren. Super Champion High Speed, 6 Volt.

Painting. Gold Striping and Lettering. Handsome finish in Fire Dept. red enamel by master craftsmen. Artistic gold striping for contrasted beauty. "F. D." and your town name in genuine gold leaf letters on each side of hood. Hose equipment not included with the above.

YOU CAN HAVE WHAT YOU WANT

Champion equipment is adaptable to any chassis such as Chevrolet, Dodge, Reo, Diamond T, G.M.C., International, Federal, Studebaker. The only price difference is on the chassis cost.

Select your chassis, any make, and write us to give you the EXACT PRICE of what you want in the way of Pump, Body, Booster Tank, Basket or Reel, Lights, Ladders, Siren, Suction Hose, Fire Hose, etc. We will send you complete specifications and the exact cost. ☞Often this is less than prices given, sometimes slightly more, depending on your selection.

NOTICE! HOW TO BUY. Order the chassis of your choice from your local dealer. Pay him for it. He has the factory deliver it direct to us. We do all the rest and you come and drive it away from W. S. Darley & Co., Chicago.

NEW MID-SHIP FIRE PUMP

Yes Sir! A 2½" Pump.

Used with Regulation 2½" Hose or as a Booster Pump with Leader Line 1½" Hose

The New Champion Amidship Rotary Pump is something entirely new in design and remarkably light in weight and compact, yet of good volume.

Many Fire Chiefs realize that a capacity of 200 gallons of water per minute is a lot of water, EVEN MORE THAN THEY GET in their districts, especially if the truck goes out on rural calls and must pump from stock troughs, cisterns, wells, etc.

It is also realized that where water supply must be conserved, PRESSURE is all important; if not more important than volume.

Three-Line Layout for 200 G.P.M. Pumper

☞One 1½" line with ¼" nozzle tip..... 25 G.P.M.
☞One 1½" line with ⅜" nozzle tip..... 40 G.P.M.
☞One 2½" line with ⅝" nozzle tip.....115 G.P.M.

*Total .....180 G.P.M.

*The total of 180 G.P.M. is based on only 100 lbs. pressure; pressure can be increased to 200 lbs. and the flow increased.

In ordering give us make, motor number and model of chassis and we will do the rest.

No. D330. Champion Type M2 Fire Pump Complete with all Valves, Gauges, Gates, Pressure Relief Valve, Caps and Power Drive Take-Off Assembly ☞for Ford Truck Chassis **$195.00**

☞If wanted for Chevrolet—Dodge—Reo—or any other make truck chassis, add $25.00 for special Power Take-Off for same.

NET PRICES Less 3% Discount for Cash

Fire Chiefs that siamese 2½" lines to 1½" leader lines know this practice keeps down losses and they fully realize it is not HOW MUCH but HOW the water is used that counts. ONE gallon inside is often worth NINE outside!

Smaller fire departments find many advantages in using hose lines that one man can control and move from one place to another or carry up ladders, stairways, into basements, etc.

It's surprising to figure out actually the conservative amount of water a 3/16" nozzle tip will use, taking water from the booster tank of truck ☞only 15 gallons a minute or so. Often village and rural fire trucks carry 100 to 300 gallons in tanks—enough to extinguish 90% of all fires without connecting up their large hose. If, however, booster tank water is not enough, the Chief turns on his 2½" hose, which he has siamesed into two 1½" lines, each 100 or 150 feet long, and has at his command two or three nozzles with assorted tips and capacities. As examples: One ¼" tip for a whip stream at 25 G.P.M., another with a ¾" tip delivering 166 G.P.M.

GUARANTEE: Try it out, give it any test you want for 30 days and if not fully satisfied we would rather you return the equipment than have your money.

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COMPLETE LINES OF TRUCK TIRES FOR EVERY TRUCKING SERVICE AT LOWEST PRICES—GIVING LONG MILEAGE AND GREATEST ECONOMY

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While there are many reasons why Firestone Tires are safer and more economical, there are two reasons that stand out above all others. One is Gum-Dipping; and the other is two extra layers of Gum-Dipped cords under the tread.

By Gum-Dipping, every strand in every cord is soaked in liquid rubber, preventing friction—adding extra strength and long mileage. By having two extra layers of Gum-Dipped cords placed between the tread and cord body, it is practical to use a tread with higher, more rugged shoulders and a deeper non-skid with flatter contour.

All this provides more rubber on the road, giving longer wear, greater traction and quicker stops. These two extra construction features are patented and used only in Firestone Tires. Take a forward step in maintaining schedules and reducing operating costs. Call on the Firestone Service Store or Firestone Service Dealer today.

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Super traction tire for unimproved roads.

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The tire that taught thrift to millions.

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Volume production tire for light trucks.

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Greatest tire ever built for all-round service. Unequalled for high speeds and heavy hauling.

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For better braking control.

FIRESTONE FAN BELTS

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Every year this question accounts for millions of dollars in unnecessary fire losses—not to mention loss of life . . . Fire fighters know that nine out of ten serious fires could be eliminated by *speedy and accurate alarms.*

That the public also realizes the importance of the time factor in fighting fire is evidenced in the constantly increasing number of subscribers to the A. D. T. Protective Services. In all parts of the country, thousands of leading concerns are insuring speedy and accurate alarms through A. D. T. Central Station Fire Detecting and Reporting Systems. Fire fighting forces are thus able to reach the scene of the fire in those vital first few minutes, which so often mean the difference between a trivial fire and disaster.

A. D. T. AUTOMATIC FIRE PROTECTIVE SERVICES

A. D. T. Sprinkler Supervisory Service: Electrically detects and reports any impediment to normal functioning of sprinkler system. Automatically summons Fire Department in case of fire.

A. D. T. "Aero" Automatic Fire Alarm: Automatically detects fire and reports exact location to Fire Department.

Also A. D. T. Watchman Supervisory and Fire Alarm Service which detects and investigates any deviation from the watchman's routine. In emergency, an armed and bonded A. D. T. patrol immediately responds. Also provides fire alarm boxes for manual operation.

Descriptive literature sent on request.

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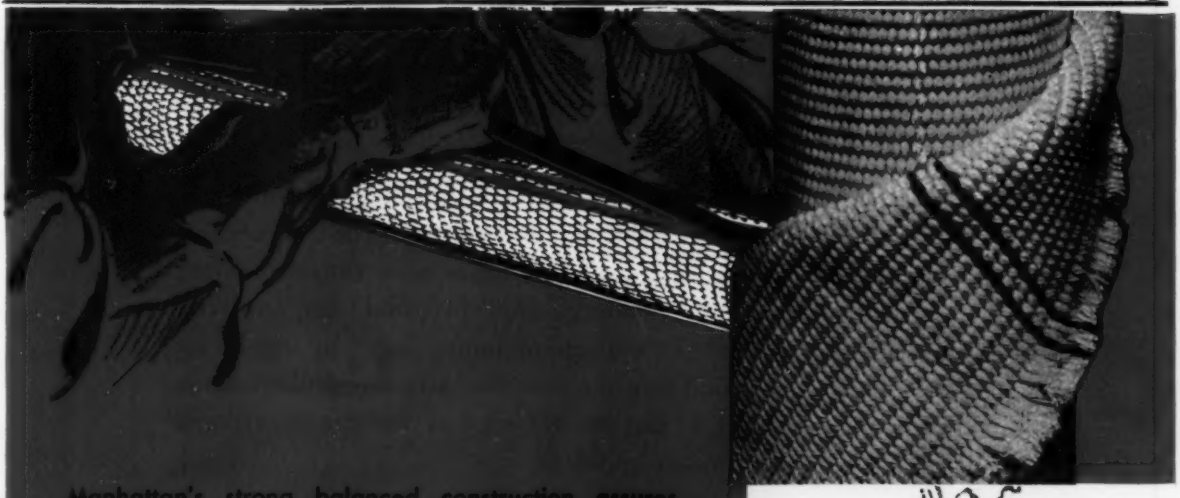
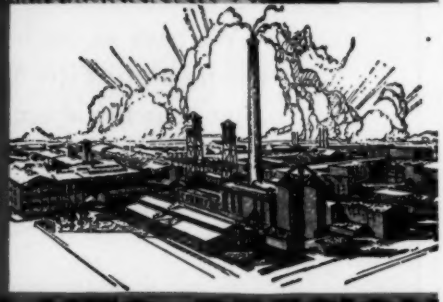
MANHATTAN Fire Hose



Manhattan's strong balanced construction assures easy and speedy handling. Manufactured under strict supervision, carefully inspected and tested for maximum pressures. Over 40 years of unfailing dependability and long service. Specify Manhattan Fire Hose.

Sole Manufacturers of Radio-Active-Treated Mildew-Proof Fire Hose



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BEGIN NOW TO BUILD UP YOUR *Fire Alarm Box Distribution*

EVERY city should follow a planned annual program for maintaining adequate fire alarm box distribution by purchasing a definite number of fire alarm boxes each year.

To accomplish this, every fire chief should first make a survey of his existing system by plotting out the locations of his present boxes on a map of his city and also marking those locations where additional boxes are urgently needed. A check up on all obsolete boxes should also be made and then a definite plan laid down to replace a certain number of such boxes each year and add a few new ones so that at the end of a ten year period, the entire system will contain an adequate number of boxes on the streets—all of a modern type.

After you have determined your needs in this manner, you should put a figure in your budget large enough to take care of the purchase and installation of these boxes. Many cities have suffered during the past few years because of reduced appropriations; but, now with business picking up and tax collections improving, you should lay definite plans to start building up your fire alarm box distribution again on a planned basis, so that the efficiency of your fire department will not become too seriously impaired.

We have an interesting booklet "Planning Fire Alarm Box Distribution For Fifty Years," that should be a real aid to you in planning your fire alarm requirements. A copy will be sent to you on request.

THE GAMEWELL COMPANY

1238 Chestnut Street
NEWTON, MASSACHUSETTS

FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 88 APRIL, 1935 Number 4

With the Editor

Putting Responsibility Where It Belongs

In these days of municipal unrest and discord, clear thinking and sensible acting are two jewels which are made more precious by their rarity. The incessant attacks on municipal officials by those who would reduce taxes, no matter at what cost to the welfare of city, are too frequently successful in stampeding public officers into actions which may prove costly to life and property.

The comments of Mayor Overton, of Memphis, Tenn., in discussing proposed purchase of fire hose, show that there are still those who can think clearly and act accordingly, even in these days of confusion. Mayor Overton recently stated:

"Although I'm always glad to see any one that puts bids in on any proposed purchases, it will do no good for anyone to come to me about the fire hose, as we will act only on the recommendations of those who will use the hose. In Chief Irby Klinke we have one of the best Fire Chiefs in the country, and we shall rely on him to guide us in the purchase of this new fire hose.

"The responsibility of fighting fires and protecting life and property rests on Chief Klinke and the men under his leadership, and they know what type or make of hose is best. We will not purchase any fire hose unless he recommends it."

It is the Fire Chief's responsibility that the department operates efficiently and keeps fire losses down. Who then is more concerned with the dependability of fire hose?

The Fire Chief is responsible to the city for money spent for maintaining an efficient Fire Department. Who is more concerned than he with keeping Fire Department costs down?

And yet many cities expect the best of work by the Fire Department and at the least expense, but give the Fire Department the cheapest of apparatus and equipment with which to do the work.

Mayor Overton is to be commended upon his clear understanding of the duties and responsibilities of the Fire Chief.

If there were more city officials like Mayor Overton, fire service throughout the country could be raised to a plane of much higher efficiency than it has been possible to obtain under meddling administrations.

Fred Sheppard

Small Diameter Linen Hose Has Since Come Into General Use for Fighting Brush and Grass Fires.

Brush and Grass Fires

By N. N. WOLPERT,
Assistant Editor,
Fire Engineering

TWELVE YEARS ago may or may not be a time in the distant past. For many residents of Berkeley, Cal., it is but a short period, for they can recall with all the harrowing details, September 17, 1923. On that day the city lost 584 buildings, and thirty others were seriously damaged, all because a brush fire from the hills three miles north of the city crept towards the city during a high wind. This $10,000,000 fire which made 4,000 persons homeless was but a small grass fire at the start, but within two hours it had approached and menaced houses within Berkeley.

At one time the fire presented a total front of about 1,600 feet in width. Within the next forty minutes, burning brands which were carried by high winds, had spread the fire to a maximum width of 2,400 feet.

Most Fires Occur in the Spring

Brush and grass fires are serious problems in sections which have large undeveloped areas, and they are most common during the dry seasons. If the fire losses data for this type of conflagration were plotted, it would become readily apparent that the number of fires bears a relationship to the amount of rainfall. Yet nearly three fourths of the fires of this type occur during the months of March, April and May, even though the rainfall may be normal for that period. Dead leaves, grass and brush which are in a dry condition early in the spring are excellent material for the spread of fire, and as such material usually carpets a large area, the fire soon spreads until a very large line of attack develops. Many forest fires originate as brush and grass fires.

While much good can doubtlessly be accomplished by making the public realize the seriousness of starting fires at points where they may develop into brush, grass and forest fires, the Fire Chief as protector of his community against the ravages of fires, cannot sit idly by and wait for the educational campaign to bear fruit. He must have material and men organized so that, in the event such a fire does take place, in spite of the constant preaching of fire preventionists, the blaze will be confined to a comparatively small front, and a much smaller damage will result.

Controlling fires in the woods depends largely upon pre-fire measures that are established. Where the vegetation is thickest, fire lanes must be made which will constitute breaks for the flames should fires start. These lanes are made by cutting down trees and ploughing up the ground for a width of ten feet or more. Such breaks in the wooded area or vegetation covered ground, provide natural limits for stopping ground fires providing wind does not carry sparks over the gap. The lanes also serve as roads for moving supplies into an area where a forest-fire crew is operating.

Fighting grass and brush fires requires a proper organization and the necessary appliances. A recommendation of the Western Forestry and Conservation Association is that there should be forty per cent more tools than there are men. The Chief should form a definite

crew upon whom he may rely in the event that he has a large brush or grass fire to fight. These men should be called on when it is believed that the fire is too large for his regular crew of men. In calling for assistance he should give directions for the easiest way to reach the fire so that the run will be made in the shortest possible time. Large crews are to be avoided. Each crew of men should not be larger than say twenty-five, or in other words it should not be larger than the department's capacity for supervising such a group of men. Where the fire extends over a large front, several crews may be provided, rather than place all the men under one control. Under ordinary conditions the efficiency of the men decreases as the size of the crew increases.

Constructing a Fire Break or Fire Lane

How Fires May Be Extinguished

When engaging men for fighting brush fires it is important that the men understand and are fitted for the laborious work. Each man must understand the temporary nature of the employment, and that after the fire has been placed under control, his services will no longer be required.

Brush and grass fires may be extinguished by water, by smothering with dirt, or by beating the flames out with wet blankets, brooms or backs of shovels. Water is conceded to be the best means for putting out a fire. Where water can be obtained it should be used, as there is no equally effective substitute. For a hot fire, the water should be spread along the fire line and not head on into the fire.

A Crew of Fire-Fighters in Action

Large apparatus units have been built for carrying water to rural fires. In addition to the large tank filled with water, they carry portable extinguishers and fire pumps, and shovels, brooms and other tools for fighting brush fires. Such apparatus can only be used where the road is near the fire or where the fire lanes are large enough and in proper condition to permit the movement of so heavy a unit.

A tank when loaded with water and mounted on fire apparatus makes a heavy, mobile unit, often too great in weight for the soft ground found near brush land. Tractor type wheels distribute the apparatus load over a larger area so that the weight per square foot is reduced. One manufacturer has a device which can be placed on a wheel within ten minutes to give the apparatus the benefit of better traction over soft land, and after the device has served its purpose, it can be removed in five minutes.

Where it is impossible to have the large water tank approach the fire, water may be brought to the blaze by means of portable pumps. Small gasoline operated pumps are placed on skids constructed like a stretcher so that two men can carry the pump to a source of water. The portable unit is placed on the ground, and a suction line dropped into a nearby stream. These pumps can deliver twenty to thirty gallons of water per minute up to one hundred pounds pressure. With the use of small hose lines, water was relayed three thousand feet in fighting a fire on wooded land in an area near Sudbury, Mass.

Stopping the Fire with Portable Pump-Type Extinguishers

Unlined Hose Easier to Handle

Unlined linen hose of small diameter is coming into use for stretching long lines. This type of hose is lighter than rubber lined hose, and when rolled, makes a more compact and lighter bundle for the fire-fighter to carry.

A combined tractor, water tank, and pumper, is used by Los Angeles for fighting brush fires in the mountainous sections of the city where brush fires constitute a menace to the suburban homes. Although the speed of the unit is but three miles an hour it is capable of operating on grades as steep as sixty-two per cent. The tractor portion of the unit hauls the water tank which

Attachments for Bettering the Traction

A device is now on the market, to be attached to the rear wheels of fire apparatus to prevent the heavy apparatus sinking into soft ground. Insert shows method of attaching the plates which are joined to form a continuous chain.

is capable of supplying four streams at a pressure of two hundred pounds.

Portable tanks worn on the backs of fire-fighters and equipped with hand operated pumps permit the use of water over a wide front. The tanks hold about five gallons of water, and are provided with short lengths of hose. A continuous stream can be thrown for a distance of fifty feet and although these pumps are small, they have been particularly effective in fighting brush fires. Forty portable pumps of this type have been credited with saving the town of Brentwood, Long Island, after fire had destroyed about two thousand acres of wooded land. Men carrying these portable pumps are not tied down by hose lines which must be shifted, and they can quickly move about to stop fires from starting at new points, or in wetting down ground in advance of the flames.

Draft Created by Hills

Where there is a slope in the land, there will be a tendency for a greater advance in the fire. The steeper the hill the greater will be the speed with which the fire will advance up grade. Fires tend to work up hills much more rapidly than they work down. The draft created by the fire itself is up-hill rather than down. In fighting fires on land covered by vegetation, the principle is to produce a gap between the burning material and new fuel, and to break the heat wave. Heat is an important factor, for heat radiation travels in straight lines in all directions, while that heat which rises vertically tends to dry out the leaves and start fires in the tree tops. The hotter the fire, the more material is dried out, and the more material that is dried out, the greater will be the advance of the flames.

When burning before the wind, these fires burn in a long oval, gradually broadening in area, until the fire area becomes circular. When there is little or no wind, the fire burns slowly away from the starting point with equal intensity in all directions. Side fires, or the trailing edges along either side of the main fire may develop new head fires. The hottest, fastest and most dangerous portion is that which is driven with the wind. Therefore in fighting such fires it is best to attack the head fire first, and the side and tail fires later. To control the head fires, they must be attacked from the front. The Fire Chief must determine the most vital point of attack, and often considerable work and ground may be saved by spending some time in surveying the fire, before definitely placing the numerous fire-fighting crews.

Where water is not available for fighting fires, hoes, mattocks and other tools are used to construct a worked-over line not over two feet from the burning edge so as to leave as little material as possible for smouldering. Another plan, called the parallel method, consists of constructing a continuous trail from six to fifty feet in advance of fire and to burn out the intervening strip. Generally speaking, this trail should never be over fifty feet from the fire and usually not over eight to ten feet. This method makes use of a continuous trail and back-firing.

Indirect Method of Fire-Fighting

The indirect method of fighting these fires consists of completing a continuous line at a considerable distance in advance of the fire, taking advantage of any favorable topography. Then the ground is backfired. In back-firing care must be exercised that fire-fighters are not between the two fires.

As a general rule the parallel method is used on all sectors where the fire is burning briskly. It should never be used where there is any danger of the inability

Two Types of Apparatus for Brush Work

Upper—Portable pump for handling brush fires. With units of this type, three thousand feet of small hose were laid in relays to bring a brush fire under control at Sudbury, Mass. Lower—A slow moving but powerful apparatus for use in the mountainous sections of Los Angeles, Cal.

Special Plates on the Rear Tires Make Possible Close Approach to the Fire

to burn out all intervening material so that fires will burn clean to the edge of the fire line.

The indirect method must be considered as an emergency method to be used only in rare cases, as burning out a wide strip of country is often difficult and dangerous. Differing sectors require different methods, but even the same sector may require different treatment at different hours of the day.

Constructing a Trail

The simple way of making a fire trail is to dig out every spark on the extreme edge of the fire and to throw back the smouldering embers into the fire. With the other methods it is necessary to make a continuous trail from one to three feet wide and to dig down to clear dirt. Small roots and rotted wood must be removed so that the fire will not be carried across the trail. The light debris consisting of needles, or duff, should be thrown to the inside or outside of the trail depending on whether such material will be of assistance in starting and scattering backfires, or whether it will form a menace by smouldering and throwing out sparks. Where there is a heavy sod, the trail can be constructed much faster with a mattock or grub hoe. Where there is a thin layer of litter on a loose sandy soil, a shovel or a heavy rake is often preferable.

No matter which method of fighting is used, some fires are apt to become established across the fire line constructed. If these new fires get away, all the laborious work spent in constructing the lines will be wasted. Therefore, in addition to having men building the fire lines, it is vital to have a patrol to detect and fight fires with the portable pumps before the fires can get away.

Brush Fires Cause Long Time Loss

When it becomes evident that the fire is under control, the Chief may discharge the extra men employed and continue fighting the fire with his regular crew. As the extra men are paid by the day or hour, this will result in a considerable saving.

As a rule grass and brush fires have not received the attention they deserve because the property value is considered small as compared with the loss of a large apartment house or office building. But while buildings may be replaced within a year or two at the most, a vegetation cover can only be made through the slow and easy processes of nature. Five, ten or even twenty years must pass to restore burned over land to something near its original condition. During the time that the land remains barren, the ground has a negative effect on the community. It is a desolate, charred, vista for the tourist, and an indication that the community has been lax in protecting one of its greatest assets. Ground which has been burned over becomes acid ground and must be properly prepared before it is fit for raising crops.

Bare Land Starts Erosion

Ground minus vegetation is a prey for soil erosion. Small cracks start to develop in the soil as there is no binder, and these develop into serious fissures. There is a rapid run-off during periods of rain, and with the high run-off, large amounts of the valuable topsoil are taken away. Farmers know that it is the top soil which produces the crops, not the sandy. or clayey loam beneath. Barren ground also has a serious effect on the water supply of the community. As there is a high water run-off, very little water finds its way to the underground water bearing strata to replenish the flow of underground streams during dry seasons. When these streams have a reduced flow, wells run dry and great hardship is caused to those whose livelihood depend on crops and cattle.

Brush, grass and forest fires become the "Old Man of the Sea" for many years to come. Unlike industrial and residential fires, which cause an immediate loss and which can be replaced by similar or better structures, blackened and burnt-over land must be handed down as an undesirable heritage. Others must pay for many years for the fire caused perhaps through carelessness and which may have developed into conflagration size through the lack of proper fire-fighting equipment.

Therefore to avoid the serious after effects of grass and brush fires, Chiefs in communities where such fires are possible, should plan and establish an effective organization for meeting such emergencies, and the department must be provided with effective tools and apparatus for fighting such fires.

Special Hazards of Hospitals

By A. H. NUCKOLLS,
Chemical Engineer,
Underwriters' Laboratories,
Chicago, Ill.

A LARGE hospital, with its heating plant, kitchen, garage, and laundry, presents common fire hazards well known to firemen. In addition to these there are others in hospitals which, for convenience, may be referred to as special hazards in contrast to the common housing hazards. They arise from the more technical or scientific developments employed in hospitals to combat sickness. They not only increase the hazard of starting a fire but when there is a fire create complex hazards, such as toxic and explosive gases. The main sources of these special hazards in hospitals are the X-ray departments, in which cellulose nitrate film is handled and stored, and the operating room, in which combustible anaesthetics are used.

Protection against these hazards in hospitals is of great importance because of the physical disability of patients. It is clearly impractical to rapidly remove any considerable number of patients down stairways or elevators. Naturally, patients are more sensitive than people in normal health to the effects of excitement or panic, fire, and toxic gases. Conditions that people may normally by their own efforts avoid may be a serious menace to the lives of patients in hospitals.

Further, it should not be lost sight of that firemen on entering a hospital in case of fire are hampered more or less in their efforts to extinguish the fire by the obligation to protect the lives of patients. This may and often does result in increased risk to the lives of the firemen themselves.

X-Ray Department in Separate Building

Fortunately, modern practice in hospitals is to have X-ray departments using cellulose nitrate film in separate buildings. While these buildings may be closely connected to the main building by corridors, there is sufficient isolation to provide some measure of safety. Unfortunately, however, many hospitals today are not provided with adequate safeguards, and in case of fire in these hospitals, the danger is not only to the patients but to firemen as well.

The Cleveland Clinic Disaster, in Which Over One Hundred Lives Were Lost

In this worst hospital film fire disaster, which happened in May, 1929, 124 doctors, nurses, patients and rescuers were killed outright or died later from results of the deadly gases given off by the burning film. The fire originated in the film room from an explosion of the gases from decomposing film. These gases rapidly spread through the building, overcoming all who breathed them.

It will be convenient to consider, first, the hazards of cellulose nitrate film; second, dangers to firemen from the combustion, and particularly the decomposition of this product; third, combustible anaesthetics and their dangers to firemen.

Hazards of Cellulose Nitrate Films

Cellulose nitrate is characterized by a low ignition and decomposition temperature. Common combustibles, such as wood and paper, ignite in the neighborhood of 600° to 700° F. Cellulose nitrate, on the other hand, readily ignites or decomposes when exposed to temperatures in the neighborhood of 300° F. On prolonged exposure it may ignite or decompose at a temperature as low as 230° F.

It is well known that the temperature of ordinary incandescent lights and steam pipes, or objects subjected to much friction, exceeds 300° F. and may, therefore, become a source of ignition to film. Clearly, therefore, it is of great importance not to have any cellulose nitrate near steam pipes, incandescent lights, or any source of heat.

You have no doubt observed that when cellulose nitrate is heated to its ignition temperature, it may either burn or decompose. It is unnecessary to enter into a detailed discussion of the technical and complex aspects of chemical reactions involved in the ignition or decomposition of film, and it will be sufficent for the purpose of this discussion to note that under practical conditions exposure of film to a temperature of about 300° F. may result in either burning, known as "combustion," or decomposition, known as "fuming off."

Rapid Rate of Combustion of Cellulose Nitrate

The rate of combustion of cellulose nitrate, as you know, is very high, being about 12 to 18 times that of wood (in the same form), and the resulting temperature is extremely high and may, therefore, cause considerable damage within a short time.

When cellulose nitrate decomposes or fumes off, it is changed rapidly from the solid to the gaseous form. This process is not a simple boiling off of the cellulose nitrate, so to speak, but is a breaking down of the solid compound, accompanied by considerable evolution of heat, and gases which are poisonous and explosive.

The ease and rapidity with which the combustion and decomposition of cellulose nitrate occurs is accounted for by the fact that heat was absorbed in its formation. Most of the combustible products with which we are familiar are formed from their elements with the evolution of heat and, therefore, on decomposition absorb heat, but cellulose nitrate is formed from elementary substances with absorption of heat. In other words, when elementary substances combine chemically to form cellulose nitrate, the reaction takes up heat and, con-

Rescuing Patients From a Hospital on Fire in Albany, N. Y.

versely, on decomposition heat is liberated. The decomposition of cellulose nitrate, therefore, once started accelerates itself and is difficult to stop.

The gases evolved by the film or cellulose nitrate depend upon whether it is burning or decomposing. If the film is burning freely in an excess of air, the gases evolved are mainly carbon dioxide, nitrogen, and water vapor, and the toxic hazard, if any, is small.

Deadly Gases Evolve When Air Is Restricted

If the film is decomposing, as will usually be the case when the supply of air is restricted, as in a closet or vault, the gases evolved include mainly carbon monoxide and oxides of nitrogen. Other gases such as hydrogen, methane, and traces of hydrocyanic acid gas, and in the case of undeveloped film traces of hydrobromic acid are also given off. Under ordinary conditions 1 lb. of cellulose nitrate yields about 4 to 5 cu. ft. of these gases, which, however, expand as the temperature rises according to the well known gas laws. The proportions in which these gases are evolved depend in a measure upon the conditions, but the poisonous oxides of nitrogen and carbon monoxide are produced in dangerous quantity under all conditions likely to be met with in practice except where film burns freely in excess of air.

When the decomposition of the film takes place under conditions of sufficient confinement to cause pressure, as may be the case in a closed vessel or vault not provided with adequate vent, the hydrogen gas is evolved in considerable quantity, and a potential explosion hazard is introduced.

Regulations for Storage

It is clear from the foregoing that when cellulose nitrate film is used in hospitals, adequate provision should be made for its safe handling and storage. The "Regulations of the National Board of Fire Underwriters for the Storage and Handling of Photographic and X-ray Nitrocellulose Films" as recommended by the National Fire Protection Association, exclude quantity storage of cellulose nitrate inside hospital buildings. Under these regulations hospitals have the option of placing quantity storage of X-ray film outside the building either in a roof structure or detached building. Even where all regulations are complied with, it is not entirely safe to rely for the control of such a severe life hazard upon mechanical safeguards, which may at any time be nullified through the failure of the human element. The best way to avoid this danger in hospitals is to use slow-burning acetate film, which can now be obtained of a quality entirely satisfactory for the purpose of X-ray work and at a price comparable with that of the more hazardous nitrate film.

Dangers From Hospital Film Fires

Coming now to the danger to firemen in hospitals from film fires, or decomposition, it will be clear that the two main dangers relate to explosive and toxic gases or fumes.

If the film is stored in a vented vault of ample capacity, the danger from explosion, if any, is small, but if the film is stored in a cabinet or vault not provided with adequate vent, there is serious danger of an explosion, and during a fire it is not possible to know just when such an explosion may occur. It is therefore of importance that Fire Departments have information in advance as to the storage of film in hospitals in their district, so that if and when a fire occurs the attack may be planned according to the prevailing conditions.

Toxic Hazard of Gases From Decomposing Film

The toxic hazard of the gases or fumes from decomposing film probably present the greatest danger to firemen, but fortunately gas masks are available for protection against this hazard. While the poisonous fumes from decomposing film are light yellow to reddish brown and irritating, and thus give some warning of their presence in the air, it would be dangerous to firemen to depend upon this as a guide. Absence of the yellow or reddish brown color is not to be taken as a sure sign that fumes are not present in dangerous concentrations.

The Effect on a Corridor by the Cleveland Clinic Explosion

Fire in San Francisco Hospital, Which Originated in the Film Room

Concentration of these fumes in air as low as .06 per cent by volume is dangerous to breathe.

The possibility of employing some other gas or chemical to neutralize the poisonous oxides of nitrogen has been suggested. I think it is sufficient, without going into this phase of the subject in detail, to point out that at the present time no gases or chemicals are commercially available for safely neutralizing the poisonous oxides of nitrogen. Ammonia has the property of neutralizing the oxides of nitrogen, but ammonia is itself a poison even in very small concentrations.

Water Only Agent to Combat Film Fires

Water is the best agent with which to combat burning or decomposing film. In fact, it is the only extinguishing agent known today that can be relied upon for this purpose. The application of water in sufficient quantity to decomposing film serves a double purpose inasmuch as the water reacts chemically with the poisonous oxides of nitrogen. Unfortunately, the poisonous carbon monoxide gas is only slightly soluble in water and cannot be effectively removed by this means.

In concluding a discussion on film it should be emphasized, I think, that the fireman has recourse to three important sources or methods of protection, as already brought out: First, having information in advance as to the storage of film in the hospitals in his district; second, the use of gas masks to prevent breathing of the dangerous toxic fumes; and third, the use of water, which is not only the best fire extinguishing agent for film but also serves to reduce the toxic hazard. In addition, all the ventilation possible should be brought about.

Combustible Anaesthetics and Their Dangers

In discussing combustible anaesthetics and their dangers to firemen, I assume that you will enter a hospital to fight fire and not to undergo an operation. Combustible anaesthetics in certain proportions with air or oxygen are capable of burning or exploding while in the lungs of a patient as well as in other spaces, provided a source of ignition is present. Under some circumstances a fireman entering a hospital to combat fire may encounter the anaesthetics in sufficient concentration in air to cause combustion or anaesthesia. It therefore appears to be worth your while to briefly review some of the hazardous properties of combustible anaesthetics.

Ethyl ether, ethylene, nitrous oxide, and to some extent chloroform and ethyl chloride have been used for many years as anaesthetics.

With the exception of nitrous oxide, which is not combustible, and chloroform, which is only weakly combustible at high temperatures, these anaesthetics are combustible and explosive when mixed with air or oxygen in certain proportions.

Ether is extemely volatile and sufficient vapor is given off to form flammable and explosive mixtures with the air at temperatures as low as 56° F. (flashing point) below zero. Ethylene is a gas at ordinary temperatures and is confined in steel cylinders under a pressure of about 50 atmospheres (at 50° F.); nitrous oxide at a pressure of about 50 atmospheres (68° F.); ethyl chloride at a very low pressure (1.3 atmospheres at 68° F.).

The ignition temperature of these gases or vapors is comparatively high with the exception of ether, which is 356° F.

Must Know Concentrations in Air That Will Ignite

In studying the fire and explosion hazard of combustible anaesthetics it is important to have information as to the proportions or concentration in air that will take fire. An important point to remember in this connection is that the oxygen of the air plays a major part in the combustion or explosion. There are only a few gases which decompose or explode in the absence of air or oxygen. Unlike cellulose nitrate, the common anaesthetics, with the exception of nitrous oxide, which is not combustible, are formed from their elements with the evolution of heat, and are therefore combustible only in the presence of air or oxygen in certain proportions or concentrations.

Lower Limit of Flammability

For convenience, the lowest concentration of a combustible anaesthetic, or for that matter any other gas or vapor which is actively combustible in air, is called the "lower limit of flammability." Below the lower limit no propagation of flame away from the source of ignition occurs, although there may be some combustion right at the source of ignition, which, however, is too weak to propagate flame.

If any combustible anaesthetic, therefore, is present in the operating room or in the basement or other spaces in concentrations below the lower limit of flammability, there is no danger of fire or explosion. Conversely, if the anaesthetic is in concentrations above the lower limit of flammability and yet not above the upper limit, there is danger.

Upper Limit of Flammability

By "upper limit of flammability" is meant a maximum concentration of gas or vapor in the air beyond which

no combustion can occur even in the presence of a source of ignition. Simply stated, the "lower limit of flammability" means there is not enough vapor or gas in the air to burn, and the "upper limit" means there is not enough air or oxygen to support combustion.

Limits of Flammability of Anaesthetics

It appears clear then that it is important to consider the limits of flammability of anaesthetics, and I will therefore give these limits together with those of gasoline for comparison.

	Limits of Flammability	
	Lower Limit	Upper Limit
Gasoline (C_6H_{12} to C_9H_{20})	1.4	about 6
Ether $(C_2H_5)_2O$	1.9	" 22
Ethylene (C_2H_4)	3.0	" 29
Ethyl Chloride (C_2H_5Cl)	4.0	" 12

These figures indicate per cent by volume of gas or vapor in air.

It will be seen that the lower limit of ether is similar to that of gasoline. The lower limits of ethylene and ethyl chloride, while higher than that of gasoline and ether, are dangerous.

It is instructive to note in this connection the amount of combustible anaesthetic in terms of weight or volume that would be required to give enough gas or vapor to reach the lower flammable limits in a room of 1,000 cu. ft. capacity, assuming no ventilation: for gasoline the amount of liquid to give 1.4 per cent vapor by volume in such a room would be 5 pt.; for ether 5 pt.; for ethylene, 2.4 lb.; and for ethyl chloride, about 6 lb. In practice somewhat larger amounts than those given would be required to form flammable mixtures, depending upon the ventilation.

Mixtures of Vapor and Air May Cause Explosions

Combustion in these limit mixtures is comparatively slow, but in mixtures of gas or vapor with air between the lower and upper limits, the combustion is intense and under conditions of confinement explosions may occur.

Under fire conditions there will be danger from flammable or explosive vapors or gases in rooms where combustible anaesthetics are used or stored, particularly if the ventilation is poor. It would not be safe to depend on your sense of smell as a guide, and there is usually little, if any, opportunity for firemen to use an indicator or gas detector.

There is not much chance, if any, of obtaining concentrations of gas or vapor above the upper limits in rooms owing to natural ventilation, and it would therefore be risky to enter a room on the assumption that the combustible vapor or gas in it was above the upper limit.

Should Know Where Anaesthetics Are Stored

It is important, therefore, that Fire Departments have information in advance as to the locations where combustible anaesthetics are stored in hospitals. It is well to remember that if sufficient ventilation can be brought about, the danger of explosion can be greatly reduced.

The anaesthetics, unlike the oxides of nitrogen, are not highly toxic for short durations of exposure except in high concentrations. Chloroform is the most dangerous to breathe. Fortunately, the fireman has recourse to gas masks in cases where it is necessary to enter rooms in which anaesthetics are present.

(Excerpts from a paper read before the annual convention of the Wisconsin Paid Firemen's Association.)

Chief Palmer Urges Civil Service

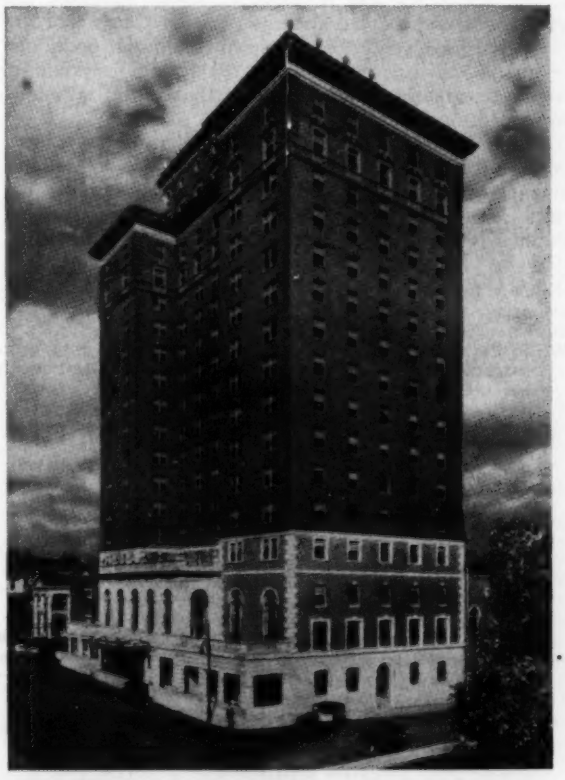
The Charlotte, N. C., Fire Department recently went under civil service, and Chief W. H. Palmer of that city has been covering the state urging other Fire Departments in other cities to follow the lead.

Chief Palmer points out that civil service in Charlotte has resulted in improved service and a higher type of personnel in the department. Most of the department abuses at the hands of ward heelers and petty politicians have been eliminated.

Chief Palmer, President of the State Firemen's Association, advises the various departments that the expense of setting up the board's work is approximately $400 and that in his opinion any city will profit many times more than that cost. He said, however, that civil service is no better than the men who compose the administration board, but he feels that the chances for more upright government personnel are increased by civil service. D. G. SPENCER.

Hotels and Rates for the I. A. F. C. Convention

There are several good hotels available for those wishing to attend the sixty-third annual convention of the International Association of Fire Chiefs, which takes place at Knoxville, Tenn., on September 24 to 27. The headquarters



The Hotel Andrew Johnson, Headquarters of the I. A. F. C. Convention.

hotel is to be the Andrew Johnson. Reservations and other information desired should be secured through the hotel managers.

The rates at the various hotels are as follows:

Andrew Johnson Hotel (I. A. F. C. Headquarters)—For single room the rates are $3 to $3.50; double bed in room, $5 to $5.50; single rooms with twin beds, $6 to $7. Three or more persons to a room, $2.50 per person. Four or more persons to a room, $2 per person.

Farragut Hotel—Same as Andrew Johnson.

Arnold Hotel—For single room, $2.50; double bed in room, $3.50; with twin bed, $4.50. Three or more persons to a room, $2 per person.

Atkin and Colonial Hotels—For single room, $1.50 to $2; double bed in room, $3; twin bed in room, $4.

Park Hotel—$2 per person, two or more in a room.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

CENTRALIZATION OF FIRE APPARATUS

PLACING all fire apparatus in one common station located at a point central to the municipality has been advocated as a means of reducing department expenses and possibly increasing the efficiency of the department.

From the replies received, centralization of fire apparatus would be admirable for small volunteer departments, but as the size of the department increases, the advantages of the plan decrease. Such places that are hampered by adverse topographical conditions, or by one or more railroads which may divide the community, would be greatly handicapped by the centralization of equipment and men.

The problem in full that is discussed in this issue appears in the box on this page. In the box on the following page is the question that will be discussed in the next issue. Should you have some comments that you would like to add to the next discussion, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

Discussion of the Question

W. B. Parkhill, Chief, St. Augustine, Fla.: In order to give the best possible protection, any Fire Department must be able to reach the location of the fire in the shortest possible time. This of course would mean that under the concentrated plan all outlying districts would suffer. That is our biggest problem here in St. Augustine.

In my opinion the central portion of any city having its fire apparatus centered at one point must be benefited to some extent. However, I do not think that the benefits derived by that portion of the city near the department would offset the loss of protection that must unavoidably be suffered by outlying districts.

In a compact city of our size (18,000), one central station will quite possibly give adequate protection to the entire city. However, as in our case, there are at times some delay caused by the fact that we have some extremely long runs to make before we can possibly reach some sections of the city.

I would imagine that under given conditions this arrangement might benefit some volunteer departments, if by being centrally located it would enable a sufficient number of men to reach the apparatus sooner, it seems to me that where all members of any department are assembled at one station the members of that department would promote more social activities and enable a volunteer department to build up a stronger organization.

E. H. Wheeler, Chief, Franklin, N. H.: Centralization of fire apparatus in large cities, in my opinion, would be very unwise. It would mean spending a large sum of money remodeling and building additional stations to accommodate the extra apparatus, called in from outlying stations. This scheme would lower the efficiency of the department in many ways. It would delay them in reaching fires in outlying districts, due to traffic and the distance apparatus would have to travel. It is quite important that the officers and men know the bad spots, conditions of buildings and other details regarding their section of the city. If they were centralized, it seems to me that the very important points could not be as thoroughly understood, as where the department is divided up into smaller units, covering the entire city, where they can render immediate and efficient service. Imagine the tenants of a three-story smokefilled block, with all possible means of escape cut off and the nearest piece of apparatus, two or three miles away. Would our politicians call this economy or efficiency?

In the small cities and towns, the apparatus is generally housed in one building, not because this makes a department more efficient but because the distance the apparatus has to cover is small, and appropriations are also small. I think this idea works out quite satisfactorily in most cases. In our city, the smallest in New Hampshire, the department is composed of call men, with the exception of three permanent drivers, who are employed in all parts of the city and it is quite remarkable the little time it takes for a squad to get into action. At a test recently, the pumper responded to the alarm, the run being half a mile, water was pumped through two lengths of 4½-inch suction, two hundred feet 2½-inch hose, and water flowed from the nozzle in exactly two minutes. The men knew there would be a test that day but they didn't know at what time or what box would be pulled. As we do not have the fast time, drivers had to wait for the first round of box 26 before leaving the station.

J. L. Newsom, Chief, Phenix City, Ala.: In our opinion it would not be advisable to store all fire fighting apparatus in one building.

We have so many volunteer firemen in the different sections of our city that should our department be condensed to one station it would have a tendency to kill their willingness to assist in fire fighting, on account of not living or being near a station.

At the present time our men are all located within the radius of a block of their respective stations and should all stations be consolidated, the men would be so widely scattered, and so many of them are without cars or other means of travel, they would not get to the station or the fire in time to be of any assistance.

Our city is only able to use three paid firemen. Should all trucks be placed at one location, it would be impossible to get enough volunteer firemen in that vicinity to handle two or more trucks.

James Black, Chief, Grand Forks, N. D.: I believe that the centralization of Fire Departments would work out in some cases especially in the smaller cities. It could be worked out very nicely here were it not for the fact that the railroad runs through the center of the city, and as we have no underpasses or overpasses, it necessitates two fire stations. I believe that the department

HERE IS THE PROBLEM

What is your opinion concerning the centralization of the Fire Department, that is, having all companies at one point?

In what way do you believe it will result in greater or less efficiency?

Do you believe such a plan would be desirable for a volunteer department? Why?

could be run with greater efficiency and at less expense.

I think the plan would work out all right in volunteer departments in view of the fact that they are mostly in smaller cities and the distance to be traveled is not great. I believe the centralization plan would result in improved efficiency.

Leland H. Carter, Bluefield, W. Va.: I do not believe it is a good idea to handicap stations by the centralization of the personnel and equipment of the Fire Department into one house.

By instituting this plan it endangers the lives of the firemen, and the equipment, for greater speed would be needed to cover the territory. Taking into consideration the insurance ratings, depreciation of equipment, and lack of immediate protection, it costs the taxpayers more money to centralize their stations than it would to scatter them where most needed.

W. L. Pitts, Chief, Selma, Ala.: I do not approve of centralization for a paid department. Companies located throughout the city enable each company to reach a fire in its district quickly thus affording a saving of time. They generally have the hose stretched, ladders raised and most of the preliminary work accomplished by the time other companies arrive.

I think it is a good plan to centralize a volunteer department, however, for towns depending on volunteers are generally small.

H. J. Mendenhall, Chief, Santa Fe, N. M.: Concentrating all companies at one point, in my estimation, would make for long runs through traffic and contribute many more hazards for firemen than they already have. It would let blazes get started at remote points from the central stations, and thereby cause much more fire damage.

I doubt if there could be improved efficiency by placing all men and equipment at a central station, as it would take away the good natured rivalry between stations that now exists, and rivalry promotes efficiency.

Centralizing would have the same effect on a volunteer Fire Department as on any other department. There might be some expense saved by housing all equipment at one point, but I believe that long runs would raise insurance rates, cause much more fire damage and result in many serious accidents due to longer runs through traffic.

John E. Gibney, Chief, Bennington, Vt.: I do not recommend centralization of Fire Departments, except possibly in small communities where a paid department is maintained.

Concentration of apparatus in one building would reduce the budget and I do not believe it would lessen the efficiency of a paid department where men are on constant duty.

Centralization would not be at all desirable for a volunteer department such as we have in Bennington, with a population of around ten thousand. We have four companies of twenty-five men in each company. In one or more of these scattered company buildings, there is at most times some member, so when an alarm comes in this means a quicker start and the men reach the scene of the fire in a shorter lapse of time. The objective of the Fire Department is to keep fire damage low, which means lower insurance rates for the taxpayer. Therefore lower cost by centralization of volunteers would undoubtedly mean greater loss by fire and higher costs in other ways.

Charles W. Combs, Chief, Greenville, Tex.: My opinion is that it is best for a small town or city Fire Department to be centralized, as it gives more men at a fire. Most small departments do not have enough manpower to handle the trucks. I think it is best for them to be housed together as it is cheaper and better for both the city and the Fire Department. The upkeep of stations, the heating, etc., would almost be enough to pay for an extra man. There are never enough men in a small town or city. There always appears to be a sufficient number of men until a big fire occurs and then there is need for several more.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What means have you established to prevent motorists from converging to a fire area and thereby blocking the approach of fire apparatus?

Do policemen respond with the apparatus to arrest offenders, and if so, what has been the result?

Have you any suggestions for eliminating this evil?

Our city has a population of 12,500. We have three pumpers of 750-gallon capacity, one ladder truck, one hose truck, one Chief's car and fourteen paid men on duty.

R. E. Caswell, Chief, Breckenridge, Tex.: In my opinion where the city is small and the buildings not too widely scattered, centralization would be ideal.

With one central station and all the equipment there it would be some saving on station maintenance. There is also an advantage in having all the men stationed at one point, enabling them to drill and train together, all in all making it a more effective and efficient fire fighting organization.

Never having any experience with volunteer departments it would be hard for me to answer this question, but I don't see how a volunteer department could operate effectively except from one centrally located station.

G. R. Robinson, Chief, Yuma, Ariz.: I do not think it a good practice to have all of the fire companies and equipment at one point in any city. The longer the run, the more chance for accidents, the longer the time arriving at a fire, the greater the fire damage.

A Fire Department to be efficient must be in a position to get to the scene of a fire as quickly as possible. This cannot be done, however, if the runs are long through congested traffic.

In an all volunteer Fire Department should there be more than one piece of equipment, I don't believe all equipment should be at one place. The men are widely separated and therefore should have some equipment in their district in case of a fire close by.

R. O. Muenster, Chief, Luling, Tex.: In my opinion, concentration in the larger cities and towns would be poor economy. The majority of fires are extinguished, with small loss, by the first due company. If the companies were centralized the runs would be longer and with proportionate traffic difficulties it is natural that the fires would reach greater proportions before the arrival of the apparatus. Losses would be correspondingly higher.

Ours is a volunteer department with three pieces of apparatus and one paid driver. To us, the centralized idea is highly desirable. The majority of our fires are daytime fires. All of our members work within a very short distance of the station, and our volunteer drivers live close by. Our runs are comparatively short, and while we have our traffic problems, we do not have the extremely congested traffic of the larger places.

J. H. Collier, Chief, Corinth, Miss.: The centralization of the Fire Department is more economical and can give instant service in towns or cities under, say 15,000 population, especially with volunteer departments. But with larger cities where industries and the residential sections are more scattered, I think that with the modern alarm and switch board systems, the department should be located at advantageous points. This enables them to arrive at the scene of the fire several minutes sooner, which is certainly one of the most important objectives of the Fire Department.

B. W. Norton, Chief, Bisbee, Ariz.: I do not approve of centralizing all equipment at one point, for apparatus would have to travel longer distances, and there would be greater danger of collision and delay in reaching fires. Home owners as well as manufacturing and other business houses are paying taxes for fire protection and are entitled to it.

Otto B. Johannes, Chief, Columbus, Neb.: The centralization of the Fire Department should depend on the size of the city and how the city is laid out.

If the railroad, for instance, is running through a city and the property both sides of the railroad needs fire protection, and the railway has no under-pass or a viaduct, a long freight or passenger train may block the department for a long time. In such a case it would be of vital importance to have apparatus stationed on both sides of the track.

James Craney, Chief, Missoula, Mont.: Centralization of all companies of the Fire Department, in my estimation,

would be a very poor plan. I believe it would result in less efficiency, because the service that the public is entitled to would be very much impaired, due to the time it would take for the apparatus to answer an alarm some distance from the central point.

We have been centralized since the advent of the motor apparatus. While we have had very good luck, still, the element of chance enters into it. This is very undesirable in the fire service.

I believe such a plan would be most desirable for a volunteer department, because the volunteers as a general rule are all working in proximity to the fire station, and could be available at once.

Sol E. Hanna, Chief, Coffeyville, Kan.: At this time we are all housed in one station which proves mighty inconvenient at times. Some alarms take us as far as two miles away from headquarters even in the city limits. We also have to pass through heavy traffic getting to these distant points. If we had another station, placed in the right location, we could reach or arrive at many fires sooner with less danger in traveling or being tied up at some railroad crossing. This would also save wear and tear on the trucks.

This plan of centralization would prove satisfactory for a volunteer Fire Department as they are all summoned to one central point to receive their orders. It is also ideal from the standpoint of cost and also, in view of the fact that volunteer departments usually cover small territories, there is nothing to be lost by concentrating their forces.

N. J. King, Chief, Goose Creek, Tex.: Centralization, to my mind, would result in delay in reaching a fire and thereby cause greater fire loss.

Centralization would result in less efficiency. I do not believe such a plan would be desirable for a volunteer department.

Tom Howe, Chief, Pittsburg, Kan.: Concentration of equipment at one point would depend entirely on the layout of a town. If the area to be covered by one station is pretty well scattered it would be advisable to have district departments. I think a volunteer department should be centralized.

John C. Haney, Chief, Barre, Vt.: I do not believe in centralizing a Fire Department. There should be a number of stations fully equipped, this of course depending upon the district each station covers.

Hose Bursts at 5-Alarm Fire

Eight lengths of fire hose burst on March 27, while members of the New York Fire Department were fighting a five-alarm fire at Beekman Street that was fed by essential oils, perfumes, and flavoring extracts stored in the two buildings damaged. The burst hose, which hampered firemen in their operations, is said to be the result of the Mayor's policy in holding up contracts for at least 150,000 feet of new hose which are badly needed for replacements.

A Miniature Torrent Escapes from the Building

So much water was poured into the building at 82 Beekman Street that a door gave way and released a flood of water.

Burst Hose Hampers New York Firemen at 5-Alarm Fire

The fire was discovered at 5:20 a.m., when the heat of the flames set off a private alarm system. A watchman turned in the alarm. When Engine 30 arrived, a second alarm was turned in, followed by three others in rapid succession. Flames shot through the five floors of the brick building, jumped an air shaft in the rear and spread to the next building. Buildings to the west, occupied by several printing companies, were endangered. By 6 a.m., fire was roaring through the two buildings and was breaking through the roof. Shortly after 7 a.m., the fire was considered under control.

The alarms called thirty-five pieces of fire apparatus, ambulances, police emergency cars and trucks. It was the first five-alarm fire in Manhattan since the burning of the Cunard Line piers in May, 1932. There were more than 250 firemen and over one hundred policemen at the fire.

Three Platoons Voted in Montana

Early in February, House Bill No. 91, which provides for three platoon system in Fire Departments in cities of the first class in the state of Montana was passed by the Legislature. The Bill was signed by the Governor on February 23, and thus became a law. All firemen in the state will hereafter work eight hours a day instead of from ten to fourteen hours as now.

The provisions of the act include a minimum wage scale of $150 per month for paid firemen in cities of the first class. The act does not become effective until July 1 of this year.

As maintenance of Fire Departments at their present strength is regarded as essential in order to prevent an increase in fire insurance rates and provide adequate protection against fires, it is calculated that Fire Department maintenance costs will be increased materially throughout the larger cities of the state.

Members of the Chalfant, Pa., Fire Department, have procured a mandamus order to have the Borough Council show why the firemen should not have their fire apparatus. The dispute started over the appointment of a Fire Chief.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Mill Dust Explosions

To the Editor:

1. What is the approximate ignition temperature of mill dust while in suspension?
2. Would the ignition temperature vary, due to moisture or water vapor present?
3. If an explosion of mill dust in suspension occurred, what approximate temperature would the gases attain while burning?
4. Is it possible, or probable, that where an explosion occurred, there would be a sharp report or detonation?
5. Would an ordinary or common lantern (coal oil) be likely to cause a dust explosion without an explosion occurring in the lantern?
6. What is about the highest temperature a coal oil lantern can reach?
7. What is the melting temperature of glass, of tin, of solder commonly used in making lanterns?

Answer: The following information was furnished by Hylton R. Brown, Engineer, Chemical Engineering Division, U. S. Department of Agriculture, Bureau of Chemistry and Soils, Washington, D. C., in answer to the above questions:

"1. Different dusts have different ignition temperatures. A general figure for what you call 'mill' dust in suspension would be about 1,200° F. This is not the ignition temperature of the dust but the temperature necessary to produce ignition and flame propagation through a dust cloud.

"2. The ignition temperature would not vary due to the presence of moisture or water vapor, provided the source of ignition was continuous. Perhaps the question refers to the ease of ignition. If this is true, a dry dust could be more easily ignited than a wet dust.

"3. In an explosion of mill dust the temperature would be approximately 1,600° F. to 1,700° F.

"4. When an explosion occurs, a deep, rumbling sound or report usually is heard, due to the release of the pressure from its confinement behind wood, metal, or concrete walls. In the open air an explosion is generally a flash without any noticeable report.

"5. An ordinary coal oil lantern would be considered an explosion hazard where dust is present. It is more likely, however, that the explosion would be caused by breaking of the globe rather than the ignition of the dust inside the globe.

"6. The highest temperature of a coal oil lantern (I presume the temperature of the flame is mean) would be approximately 1,600° F.

"7. Different types of glass soften at different temperatures. For so-called "soft" glass the temperature would be about 900° F. The melting temperature of tin is about 449° F., and for solder commonly used in making lanterns, 250° F. to 300° F."

Carbon Tetrachloride Fumes

To the Editor:

We have read with interest, in your February issue, a letter from E. J. B. and your answer, with reference to carbon tetrachloride fumes.

While we are in sympathy with the doubt in this matter expressed by your correspondent, we are extremely surprised at the answer which you furnish, especially as it is based on a report by the U. S. Bureau of Mines. As, however, this answer is based on a particular incident occurring as far back as 1922 we think it might interest you to know not only our opinion but the experience of most British users including the British Admiralty.

The generation of phosgene from carbon tetrachloride, when heated, by being played upon a heated substance or surface, can be undisputed since simple analysis can prove this, though the quantity generated depends upon the time which the carbon tetrachloride is in contact with the heated substance over its critical temperature. It is also undisputed that phosgene was one of the most dangerous poisonous gases used in the late war, and apart from certain difficulty in its operation, has not been superseded in this respect.

With this starting point, the certainty of the generation of poisonous and, if necessary, fatal gases, it is only a matter of recalling actual experience to show how dangerous in practice the result can be. Apart from numerous complaints, which we have received from chief officers of fire brigades all over the country as to the toxic effects from the use of carbon tetrachloride, we are in possession of facts as to the proof, after detailed medical examination, of the death of a seaman in a British destroyer last year who used a carbon tetrachloride extinguisher in a closed compartment

Yours faithfully,
THE NATIONAL FIRE PROTECTION CO., LTD.,
Richmond, Surrey, England.

Another Comment

To the Editor:

We were also very much interested in the answer covering carbon tetrachloride fumes on page 57, of the February issue of FIRE ENGINEERING under questions and answers. This copy was passed around to the executives of our company and they are very much pleased to note the way this question was answered. It apparently is one of the best answers we have seen to this question in quite some time.

We have plenty of information compiled on this subject which is available should anyone care to receive it.

Very truly yours,
J. P. MALONEY,
Asst. General Sales Manager,
Pyrene Manufacturing Company.

EDITOR'S NOTE: The Underwriters' Laboratories of Chicago issued the following statement regarding carbon tetrachloride fire extinguishing fluids:

"In thousands of tests in extinguishing fires with carbon tetrachloride extinguisher liquids, no apparent injury to the health of members of the staff of Underwriters Laboratories has been experienced, although the irritating fumes caused lachrymation and in some cases resulted in a subnormal feeling lasting for several days. These tests were run under varying conditions covering a period of twelve years, and included the use of small rooms partly ventilated with repeated exposure in some cases for hours at a time."

The experience of the Underwriters' Laboratories confirms the opinion expressed in the answer to a question appearing in the February issue of FIRE ENGINEERING.

While there is undoubtedly a trace of phosgene generated when carbon tetrachloride is discharged on iron which has been heated to high temperature, still from the practical standpoint the danger cannot be considered severe; otherwise there would have been high mortality among those who have used carbon tetrachloride extinguishers on fires, even including automobile fires. There are few, if any, cases on record where a life has been lost through exposure to gases generated by the use of carbon tetrachloride extinguishers on fires.

The value of the cover-up system of the Egyptian Fire Fighters Association of Southern Illinois was demonstrated at a fire which occurred at Marion, Ill. Chief Herring made the run from Murphysboro, a distance of twenty-eight miles. Aid was rushed from Carbondale, Herrin and Johnston City.

FIRE HOSE PRICES ATTACKED

Federal Trade Commission Investigation Results from Complaint Registered by Mayor La Guardia of New York

By Fred Shepperd

ON two different occasions recently New York City opened bids for supplying the city with 12,500 feet of 1½-inch, 150,000 feet of 2½-inch, and 20,000 feet of 3-inch fire hose. A large number of manufacturers submitted bids and each bid was identical.

Because the prices asked were somewhat above the last prices paid for hose by New York and considerably higher than the lowest figures at which fire hose was purchased in the last decade, Mayor F. H. La Guardia took the matter to Washington and now the Federal Trade Commission has cited the manufacturers on the ground of price fixing.

The Mayor recently made the fantastic suggestion that the city go into the fire hose manufacturing business and appealed to the State Legislature for authority to do so. The proposition was laughed down by the legislature.

Apparently stung by this rebuff, the Mayor vehemently declared: "This and many others matters laughed at in Albany, will get serious consideration in Washington."

Harry A. Babcock
of the Federal Trade Commission, in charge of fire hose price inquiry.

It is generally admitted that during the period of low hose prices in New York, manufacturers made no money on the sales. Orders usually went to those mechanical rubber goods makers with whom fire hose was a side line. The business was taken merely to keep workmen busy when there was a lull in other departments of the factory.

Such a practice was destructive to fire hose business in several ways; it established false conception as to fair hose prices; it froze out many of the makers of better grades of hose, and the quality of the hose undoubtedly suffered.

It was to prevent such price cutting that the NRA encouraged the manufacturers to get together and formulate codes of fair competition. The manufacturers of mechanical rubber goods, including fire hose manufacturers, did so. Minimum fair prices were established and enforced. Mayor La Guardia's complaint is against such "price fixing."

The New York Times of April 3, commented editorially on the situation in a very illuminating manner. Excerpts from the editorial follow:

Tangle in Fire Hose

"Of all governmental inconsistencies, none could be more puzzling than the great to-do over the high price of fire hose. The attorney of the Federal Trade Commission, appearing before the Senate Finance Committee, asserts with horror that the cost of fire hose rose from 23* to 34* cents a foot in October, 1932, to more than 78 cents a foot in 1934. He attributes the increase mainly to the Code Authority established under the NRA. New York, Milwaukee and other cities, he asserts, complain that when they advertise they receive identical bids from the fire-hose manufacturers. On Feb. 11 of this year, for example, New York City received thirteen bids, all quoting 82 cents a foot. He wants the Federal Trade Commission to bring anti-trust proceedings against the Rubber Manufacturers Association and a group of particular companies.

"All this strangely overlooks the very purpose, almost the very existence, of the National Industrial Recovery Act. That act nowhere forbids excessively high prices, but it does frown on 'destructive price cutting.' It prescribes the creation of codes to prevent the latter. Section 5 of Title I of the act specifically provides that 'While this title is in effect . . . and for sixty days thereafter any code . . . and any action complying with the provisions thereof taken during such period shall be exempt from the provisions of the anti-trust laws of the United States.'

"The Rubber Manufacturers Code, which controls the makers of fire hose, was approved by General Johnson and the President on Dec. 15, 1933. It provides under Section 2 of Article VII that 'No member of the Industry shall initiate the sale . . . of any product . . . at a price . . . less than the seller's own individual cost.' as determined by prescribed accounting methods. This means, in effect, if each member of the industry is to remain in business, that the minimum price for the product must be at least as high as the cost of production of the most inefficient producer. The code of the Mechanical Rubber Goods Division, which specifically includes the hose makers, provides further that no member of the division shall be permitted to cut his prices without filing notice at least ten days in advance with the association—whereupon, presumably, other firms in the business may have an opportunity to point out why they think that such a cut would not be cricket. Under this set-up, price increases and identical bids hardly seem a mystery. . . . By what possible logic can one agency of the Federal Government prosecute an industry for doing what Congress and another agency have authorized and approved?"

* Apparently the Editor of the N. Y. Times was misinformed. These prices were for 1½-inch hose while the 78-cent rate was for 2½-inch hose.

Chief John Evans Loses Son

Chief John Evans of the New Orleans, La., Fire Department, lost his son on March 25 as the result of a heart attack believed brought on by acute indigestion. The son was thirty-two years old and was Assistant Chief in charge of the Fire Prevention Bureau. He leaves a widow and three children ranging in age from five years to eighteen months.

Bermuda "Movie" Theatre Destroyed

The Reid Hall Theatre in Hamilton, Bermuda, was completely destroyed by fire and the surrounding buildings were in great danger of being damaged by flying embers, moved by high winds. Apparently the fire started back stage. It was discovered by a policeman at 12:15 a.m. The theatre had been closed at 11:40 p.m., after housing an enormous crowd to see the "Scarlet Pimpernel."

The constable telephoned the fire station and the four blasts were blown on the siren to direct the volunteer firemen. The entire department arrived with five engines. They found the theatre completely involved. Streams of water were played from all sides. The pumping station put on full pressure, and aid was rushed from St. Georges and H. M. S. Malabar. Guests in the Windsor Hotel had to rush from the building and several nearby stores removed their goods. The entire police force assisted by troops were required to keep the large crowds back. The building was insured for $125,000. Damage was estimated at about $75,000. Every length of hose of the Bermuda Fire Department was in use at the fire. The brigade was recently re-organized and great credit is given to the volunteer department, which has but one paid member, in handling of this fire.

This was the largest fire in Bermuda since the S. S. Bermuda burned at its dock in June, 1931. J. K. LEE.

Marlboro, Mass., plans to purchase a new pumper.

Hingham, Mass., has voted $12,500 for the purchase of a pumper.

Swampscott, Mass., has voted to purchase a 600-gallon motor pumper.

Lynnfield, Mass., is planning construction of a combine f fire and police station.

Middletown, Conn., has purchased a Pirsch triple combination pumper, with a 100-gallon booster tank.

The WATCH DESK

Our inquiring reporter overhauls the firemanic news of the day

By Roi B. Woolley

Hot Seat

Harvey Pontius, of Indiana, literally had his pants burned off when he forgot his trousers were oil soaked and struck match on their seat. Doctors said he was not seriously injured. F. D. report on "seat of fire" was interesting—but not to Harvey.

Brew Blows Out Blaze

Larchmont firemen were called to apartment of Mrs. Storey, in Brompton Apartment. Huge steak fed flames in oven which was red hot. All visible home remedies failing—salt, flour, etc.—vols were about to dump extinguishers on blaze when one had bright idea. "Have you any beer here," he asked Mrs. Storey. "Yes," she replied, "but don't drink it now—put out the fire first." (visions of beer drinking vols in mind no doubt). He got her last bottle. While one man yanked open oven doors, he shook bottle and sprayed foamy beer onto blaze. Fire quit—so did vols.

Three—And Out!

Topeka hangs up "home-run record." Three fire alarms within an hour for same house sets a record. First call brought firemen and apparatus to home of K. K. Chesney for small roof fire. A "re-kindle" brought 'em back few minutes later. Third "strike" came when neighbor, seeing electric light burning through hole in roof, sent in another alarm. Neighbors passed restless night.

Death Penalty for Arson

Soviets don't dally with arsonists. Nikanor Novikoff, member of the Filistroy Fire Department (find it on your own map) was sentenced to death and executed for incendariarism. Vitali Bogatireff, "Manager" same department, was sentenced to five years' imprisonment for neglect of duty. That's making the punishment fit the crime with a vengeance.

Most Important Fire Alarm Box

Signal No. 1234 has been placed on outside of White House, Washington. This in addition to box on inside. Claimed not installed because of any increased fire hazard, but part of general plan that went with remodeling executive offices. Response of F. D. to that box brings sixteen pieces of apparatus. Who'll send in the first false alarm?

Kept "Home Fires" Burning

In Haverill (Mass.) firemen returned from false alarm to discover chimney of firehouse ablaze. In midst of excitement, Henry T. Batchelder and Alan R. Boardman had to depart quickly from firehouse blaze to extinguish fire more important to them. Roofs of their automobiles were touched off by sparks from the firehouse chimney.

Another False Alarm Fatality

Charles Vizaro, township electrician (Lyndhurst, N. J.) was fatally injured when hook and ladder truck on which he was riding was in collision with truck owned by Bayonne Steel Products Corporation, Newark. Vizaro, aged 56, was thrown against a steel sign by impact. Died later. Apparatus en route to answer alarm which later proved false. Driver of steel truck, Richard Mahoney, held in bail of $2,500 on charge manslaughter.

More Traffic Fatalities

One woman was killed, five persons—including two Passaic (N. J.) firemen—injured when engine, responding to alarm for fire, crashed into Passaic-Garfield Line bus at Madison Street and Hoover Avenue (Passaic) overturning it and throwing it on sidewalk. One woman died an hour later with fractured skull. Fireman Joseph Knapp, driver of fire truck, and George Polinak, injured, recovered, as did other passengers of bus who were hurt. Firemen charged bus driver, Michael Yanko, failed heed warning siren.

Accidental False Alarm

Large pipe being unloaded from truck on Welfare Island (N. Y. C.) slipped out of grip of laborers, struck fire alarm box and sounded alarm, which brought three engine companies, fire boat and other equipment. Newspapers claimed: "there was no excitement."

Death Laid to "Heating Stone"

Mrs. Caroline R. Davis, aged 90, residing in Millport, near Cooperstown (N. Y.), was fatally burned when she took a heated soapstone wrapped in newspaper, to bed with her. Short time later her neice, Mrs. James Kerr, noticed smoke and called aid, but too late to save old lady.

What's the Relay Record?

A Nassau County (N. Y.) Fire Chief asks us what is the longest "stretch" on record? Frankly we don't know. Here's one that is hard to beat, however. Over in Clementon, (N. J.) one March, firemen stretched hose line from Third Street to Pine Hill, distance of mile and one-half, to get water on burning home of Rudolph Friedell, Pine Hill. Five pumps worked in relays; firemen from eight companies saved furnishings, held damages to $1,500. Anyone "relay" us a better record without "stretching the truth?"

Firemen Get Rolling School

If firemen can't go to school, take the school to them. The first firemen's school on wheels of its kind, equipped with every necessary implement for combating fires, was presented in Mineola (L. I., N. Y.) to Nassau County Board of Supervisors by the Vocational Educational and Extension Board. Car has approval of New York State Board of Regents, and was accepted on behalf of County by Supervisor J. Russell Sprague, at fitting ceremony. Forty-two Fire Departments of County are enrolled in the school, 'tis said. Captain W. H. Bedell in charge of instruction.

New York to Buy Apparatus

On April 18, New York City, will open bids for supplying the city with twenty 1,000-gallon pumpers and twelve 85-foot aerial trucks.

FALSE ALARM MESSAGE ON TEXACO PROGRAM

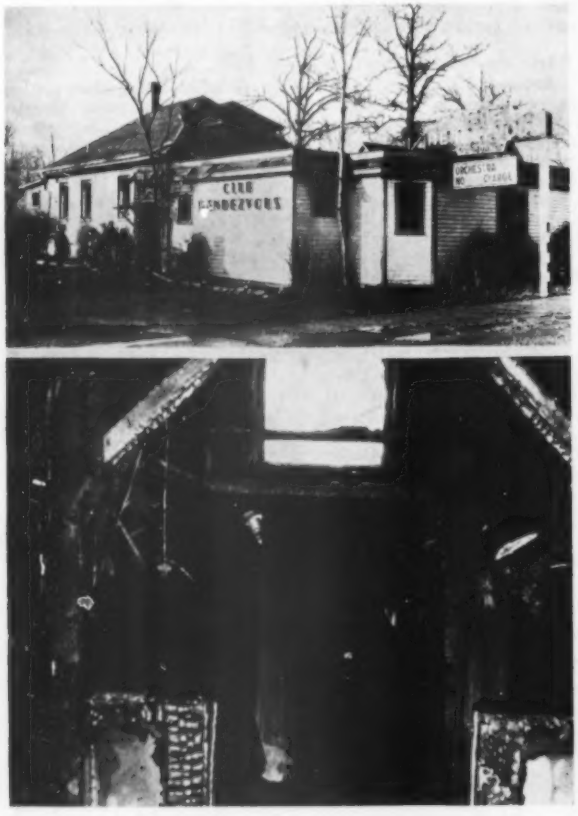
At the conclusion of the April 30 broadcast by "Chief" Ed Wynn, the announcer on that program will present a message on the Menace of False Alarms from the International Association of Fire Chiefs.

The Texaco Company is taking this means of cooperating with the Association in combating the growing problem of the false alarms. The Company is willing to cooperate further with the International Association of Fire Chiefs if sufficient interest is shown by Fire Chiefs in their efforts. Chiefs are therefore urged to listen in on this broadcast and to write the Texaco Company, 135 East 42nd Street, New York City, their comments thereafter.

Six Dead When Fire Traps Guests

Lessons supposedly learned at the expense of those who died in the holocaust of the Triangle Shirt Company Fire in New York City or the Iriquois Theatre Fire at Chicago in 1903, proved to be but meaningless incidents to those who were concerned with the construction and operation of a roadhouse located at Morton Grove, a suburb of Chicago. Six persons lost their lives and thirty-four were badly injured because when fire did occur in the building which was a converted residence, there was but one exit and the door of that opened inward instead of outward.

The Club Rendevous was formerly a brick bungalow type residence. Three frame additions had been made, and although the reconstructed home secured the approval of fire inspectors, fire insurance companies refused to write policies on the property. The dance floor was in the frame



Two Views of the Ruins of the Club Rendezvous

Upper, view from the outside showing the charred doorway which was the one exit from the roadhouse. Lower, the remains of the small anteroom which was used as a check room.

addition at the front, about six feet below the main building level. It led to a small anteroom which served as the check room.

The place was crowded with Northwestern University students who came after the college show, "Good News." The dance floor was filled and it was even difficult to find standing room in front of the bar.

About 2:30 a.m. there came a burst of flame from a corner of the dance floor near a gas heater which was suspended from the ceiling. In a frenzy of fear the guests crowded toward the one exit, and milled about the door so that it was impossible to secure the needed space to swing the door inward. Many who escaped did so by smashing windows and then crawling through the opening. When firemen arrived, they helped in rescuing some of the victims.

A volunteer fire department has been organized at Hobbs, N. M., with Chief Lasley in charge.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of March, 1935. These figures, compiled from the telegraphic reports are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending March 31	Loss in Thousands of Dollars
Terra Alta, W. Va.—Post office and several stores destroyed	70
Los Angeles, Cal.—Processing plant of California Absorbents Corp.	65
Alva, Okla.—Administration bldg., Northwestern State Teachers' College	400
Sebewaing, Mich.—J. C. Liken Co. dept. store destroyed	65
Woburn Center, Mass.—Grain elevator of Cummings & Chute, Inc.	50
Astoria, L. I., N. Y.—Steinway Street business property	125
Catskill, N. Y.—High school destroyed	65
St. Petersburg, Fla.—Sunshine Lumber Co., adj. property	80
Williamsport, Pa.—Bldg. of N. Y. Central R. R., destroyed	100
Marshall, Minn.—Plant of Marshall Produce Co.	65
Pittsfield, Mass.—Property on Salisbury estate	50
Little Rock, Ark.—Storage plant of Southern Ice & Utility Co.	125
New Tazewell, Tenn.—Tazewell dept. store and adj. property	65
Geneva, N. Y.—Plant of Geneva Foundry Co.	50
Longview, Tex.—Property of Pearlstone Ash Co.	65
Buffalo, N. Y.—Freighter C. S. Robinson of Inter-Lake Steamship Co.	125
Camden, Ark.—Arnold & Doyle building destroyed	80
Savannah, Ga.—Terminal of Ocean Steamship Co.	400
Huntsville, Tex.—Government cotton warehouse damaged	50
Peoria, Ill.—Rectifying plant of Penn-Maryland Corp.	400
Atoka, Okla.—Zweigel Hardware store and adj. property	65
South Boston, Mass.—Garage of Brine Transportation Co.	50
Boston, Mass.—Bldg. opposite North Station damaged	50
Deal, N. J.—Four summer homes located on Neptune Ave.	65
Freeport, N. Y.—Several business establishments in Olive Bldg.	125
Paducah, Ky.—Dwelling of Geo. F. Keiler destroyed	50
Raleigh, N. C.—Efrid's department store destroyed	80
Pittsburgh, Pa.—St. Patrick's Catholic Church destroyed	150
St. Laurent, Que.—Gohier woodworking factory	50
Sydenham, Ont.—American Hotel and adj. property	50
Roaring River, N. C.—Plant of Roaring River Furniture Corp.	165
Stinesville, Ind.—Consolidated School bldg. destroyed	70
Ashland City, Tenn.—Business and residential property	80
Athens, N. Y.—Business and residential property	200
Pittsfield, Mass.—Woolworth store and adj. property	200
Sault Ste. Marie, Ont.—Store of Soo Jobbing Co.	50
Brookline, N. H.—Seven ice houses of Metropolitan Ice Co.	50
Brunswick, Ga.—Glynn County Casino on St. Simons Island	60
Madras, Ore.—Property on Hay Creek Ranch, 14 mi. east	50
Brooklyn, N. Y.—Unfinished apt. bldg., Bay Ridge section	50
Milltown, Ind.—Crawford County school bldg. destroyed	50
Akron, Ohio—Bldg. occupied by Portage Paper Box Co.	50
Richmond, Me.—Main Street business property	80
Pringle, Pa.—High school bldg. destroyed	65

Ex-Chief John B. Conlon Dead

John B. Conlon, retired Battalion Chief of the New York Fire Department, and a member of the department for twenty-six years, died at the age of seventy-seven. In 1905, six years before he retired, he was awarded the Congressional Medal for saving fourteen lives during a period of twenty years. For a time he was in charge of the Marine Division.

Chief Conlon was a member of the Knights of Columbus and the Elks. He is survived by three brothers.

New Jersey Signal Men Meet

Thirty-five communities were represented at a meeting of the New Jersey Municipal Signal Association held at Harrison, N. J., March 21. The following talks were given:

"Public Service Rates in Fire Stations," by Joseph A. Geiger, Bayonne.

"Siren Code Control System," by Clark Pool, Signal Engineering and Manufacturing Company.

"Auxiliary Fire Alarm Systems," by F. R. Bridges, the Gamewell Company. This paper also included a demonstration.

"Crime Conference Held in Trenton," by William H. Jordan.

Medway, Mass., is considering the purchase of a pumper.

Watertown, Mass., is contemplating the purchase of a new pumper.

Chief W. Q. Dowling of Jacksonville, Fla., has appointed Fireman FitzAndrews as Fire Marshal.

Chelmsford, Mass., has recommended the purchase of a motor pumper of 500 gallons capacity at a cost of $8,400.

Charlotte, N. C., To Get Closed Apparatus

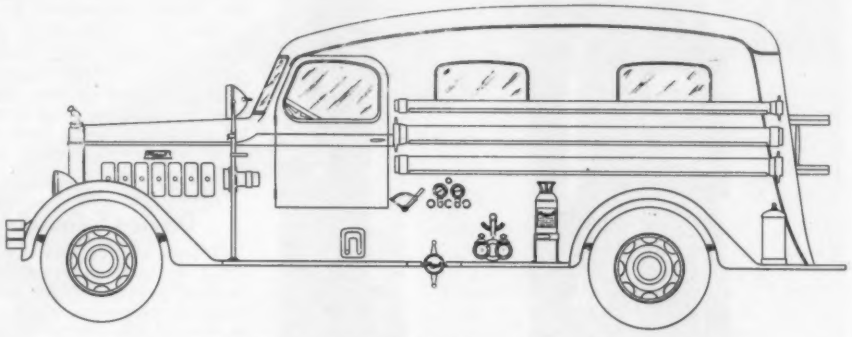
What will probably be the first closed body fire truck built by an American Manufacturer for an American Fire Department is now being constructed by the Mack Trucks, Inc. This new machine is a radical departure from anything so far built in this country. As shown in the drawing herewith, it will have a closed-in body, within which men will ride. Hose will be stored inside the body beneath the seats. Present plans call for an open rear end of the body, for the weather at Charlotte, N. C., is not considered sufficiently severe in winter time to necessitate doors at the rear.

Suction hose lengths will be carried on one side of the body and two ladders nested on the other. Provision for carrying ten men will be provided, four on each of the two seats within the body, and two in the driver's compartment.

All control apparatus, for operating the pump, will be mounted on the side of the body, as shown in the sketch. Present plan of the manufacturer call for turret type top on the truck, which will consist of a single piece of steel stamped to the desired form. The metal will be of sufficient strength to protect the men should the truck overturn.

By having all the men ride within the body of the truck, there will be less danger of injury, such as is present when men ride on running boards. Furthermore, better protection against the weather is provided by this type body. The truck body follows the design suggested by Chief W. H. Palmer, of Charlotte.

Incidentally, many European Departments have been employing closed body fire trucks and have found them very satisfactory from the standpoint of protecting the men against injury and illness, particularly in cold weather.



Side Elevation of Fire Apparatus with Closed Body

Fairfield Chiefs Discuss Brush Fires

A paper on fighting forest and brush fires by Captain Frank Fox, of the Stamford, Conn., Fire Department, was a feature of the regular meeting of the Fire Chiefs' Emergency Plan of Fairfield County, held at the Noroton Fire House, Post Road, in the Town of Darien, Conn., on the evening of Wednesday, March 27.

The members were welcomed by Alton Williams, Selectman of Darien, James Gaffney, President, and Thomas Boyle, Chief of the Noroton Fire Company.

Captain Fox, in his paper, classified brush fires in three divisions—1, surface; 2, ground, and 3, crown fires. He described the use of back fires, in controlling severe conflagrations in brush or forest, but said that this means must be used with great caution and only by those who have had experience in this type of fire fighting. It was important, in fighting brush fires, not to expose the men or allow them to get between two blazes. He described a hill fire, and said that a blaze would travel with great rapidity uphill, the fire creating its own draft.

Assistant Chief Potter, Sound Beach, reported for the Ways and Means Committee, and gave some statistics of the equipment of the Fire Departments of the county. He said that the committee was anxious to learn the condition of the equipment as regards fire hose couplings, and asked that each Chief bring a pair of couplings to a meeting, so that the committee could ascertain how the various departments could assist each other in case of a conflagration.

Flowers were sent to Chief Veit, of Stamford, who, while greatly improved, is still in the hospital.

The topics in the Question Box which were discussed were: "What is Spontaneous Combustion and What Causes It?" "What Precautions Should Be Taken to Prevent Injury to Firemen in Fires in Calcium Chloride?" "Do Drivers of Fire Apparatus Need to Have Drivers' Licenses in Connecticut?" "How Obtain More Confidence and Respect from the Public?" There was also some consideration of the question involved in the compulsory closing of back doors of taverns, and the hazards caused by the order of the State Liquor Authority's order to close these doors. The discussion on these topics was quite general.

The Nominating Committee was announced by President Knickerbocker as Chiefs McNamara, Carroll, Boyle and Captain Sanger, and the Dinner Committee as Chiefs Burns, Veit, Hubbard, and Assistant Chiefs Scully, Volk and Houghs.

The next meeting of the Plan is to be held at Fire Headquarters, Danbury, Conn., on the evening of Wednesday, April 24. Refreshments were served by the local department after the meeting.

Plans Made for New England Convention

A meeting of the Officers and Board of Directors of the New England Association of Fire Chiefs was held in the Central Fire Station, New Bedford, on March 21 to formulate plans for the convention to be held in that city, June 25-27.

Visits were made to the Hotel New Bedford and to the State Armory where the meetings and exhibits are to be held. Chief Daniel B. Tierney, of Arlington, Mass., and Chief Edward F. Dahill, of New Bedford, were appointed as the Committee on Exhibits.

It was voted to extend honorary life membership in the association to Ex-Chief A. P. Woodward, of Danielson, Conn., and Ex-Chief Walter A. Collins, of Holliston, Mass. Secretary John W. O'Hearn reported the death of an associate member, John W. Keane, ex-District Chief of Marlboro, Mass.

A tentative program was drawn up for the convention and it was voted to invite Chief John J. Towey, of Newark, N. J., President of the International Association of Fire Chiefs, to attend and deliver an address.

The meetings will open on Tuesday morning, June 25, with the customary addresses of welcome, followed by the annual memorial service. Many interesting topics are being arranged and a report will be made of the progress of the Massachusetts Firemen's Training Schools. There will be a session for forest fire wardens. Both meetings and exhibits will be in the armory.

Those who attended the meeting were:

Chief John S. Pachl, Annex Fire Department, New Haven, Conn., President; Chief David A. DeCourcy, Winchester, Mass., First Vice-President; Chief John W. O'Hearn, Watertown, Mass., Secretary-Treasurer; Chief Daniel B. Tierney, Arlington, Mass., Director; Chief Oliver T. Sanborn, Portland, Me., Director; Chief William C. Mahoney, Peabody, Mass., Director; Chief Michael W. Lawton, Middletown, Conn., Director; George W. Austin, Boston, Registrar; Harry Belknap, Boston, Press Representative; and Chief Edward F. Dahill, New Bedford.

An interesting feature of the convention will be a real old fashioned New England clambake and shore dinner. The detailed program will be announced later.

HARRY BELKNAP.

A 600-gallon pumper has been delivered to Troy, N. Y., and has been placed in service.

Fire apparatus for protecting farm property has been delivered to Prophetstown, Ill.

Follansbee, W. Va., is contemplating the purchase of fire apparatus. Funds are being raised.

Wabash, Ind., is trying to win approval for the purchase of fire apparatus.

Federal Announces Alarm Detector

The Federal Electric Company, of Chicago, Ill., recently announced a device which it is hoped will prove an effective means of curtailing the false alarm evil. The device consists of a siren mounted on the bottom of a cabinet in such a manner as to be inconspicuous. On the cabinet is also

Two Views of Fire Alarm Detector

mounted a telltale light which operates, together with the siren, when an alarm is sent in from the box. The control cabinet may be mounted high on an electric pole, or on a nearby building adjacent to the fire alarm box. The siren, which is similar to traffic siren, may be heard for six or eight blocks in any direction, while the light, which may be of any desired color, directs the attention of police officers or others to the exact location of the box.

No connection is made into the fire alarm circuit, but local supply of current is used, and the device functions immediately upon the tripping of the fire box hook, even before the first signal has reached headquarters.

The apparatus in the cabinet does not interfere in any way with the sounding of the alarms or the operation of the fire alarm box, and the detector may be located in such a way that it is not noticed by the person who sends the alarm.

In the case of legitimate fire alarms, the device serves as an aid in summoning policemen to clear traffic or to aid persons in escaping from burning buildings in advance of the arrival of the department.

Due to the instant lighting of the light and sounding of the siren, all radio cars and foot patrolmen in the neighborhood are attracted to the box, and if the sender of the alarm is not caught, a description of him might be obtained by persons in the neighborhood, who might also secure the number of the car used by the person sending in the false alarm.

The illustration herewith show two views of the fire alarm detector mounted on a power pole.

Providence Wins Grand Award

The grand award of the National Fire Waste Council for the city making the best record in checking fire waste, in 1934, has been won by Providence, R. I., according to a recent announcement issued by the Chamber of Commerce of the United States.

A list of the winning cities and those receiving honorable mention, follows:

Class I—Cities over 500,000 Population—Winner—Philadelphia, Pa. Honor Cities—Milwaukee, Wis.; Detroit, Mich.; Baltimore, Md.; St. Louis, Mo.; Pittsburgh, Pa.

Class II—Cities from 250,000 to 500,000 population—Winner—Providence, R. I. Honor Cities—Atlanta, Ga.; Cincinnati, Ohio; Rochester, N. Y.; Indianapolis, Ind.; Houston, Texas; Newark, N. J.; Columbus, Ohio; Kansas City, Mo.; New Orleans, La.; Minneapolis, Minn.

Class III—Cities from 100,000 to 250,000 Population—Winner—San Antonio, Texas. Honor Cities—Wichita, Kan.; Grand Rapids, Mich.; Hartford, Conn.; Richmond, Va.; Honolulu, Hawaii; Wilmington, Del.; Nashville, Tenn.; Fort Worth, Texas; El Paso, Texas; Youngstown, Ohio.

Class IV—Cities from 50,000 to 100,000 Population—Winner—Lakewood, Ohio. Honor Cities—Asheville, N. C.; Fresno, Cal.; New Britain, Conn.; Greensboro, N. C.; Berkeley, Cal.; Racine, Wis.; Pasadena, Cal.; New Rochelle, N. Y.; Malden, Mass.; Savannah, Ga.

Class V—Cities from 20,000 to 50,000 Population—Winner—Owensboro, Ky. Honor Cities—Parkersburg, W. Va.; Elyria, Ohio; Lubbock, Texas; Newburgh, N. Y.; Richmond, Cal.; Bellingham, Wash.; Chelsea, Mass.; Rochester, Minn.; Muskegon, Mich.; Maplewood, N. J.

Class VI—Cities under 20,000 Population—Winner—Geneva, N. Y. Honor Cites—Palo Alto, Cal.; Albany, Ga.; Valley City, N. D.; Stillwater, Okla.; Pottstown, Pa.; Lafayette, La.; Ridgewood, N. J.; Colfax, Wash.; Hollister, Cal.; Coatesville, Pa.

The winners in the various classes will receive plaques at the annual meeting of the Chamber of Commerce of the United States to be held April 29. The others will receive certificates of honorable mention.

Dayton Sponsors Junior Baseball Leagues

Officers and men of the Dayton Fire Department, Dayton, Ohio, are already engaged in laying plans for the coming baseball season. This will be the third year of their program of sponsoring Junior Baseball Leagues in the city, and in view of the success during the past two seasons, they feel sure that this year the project will be even more successful than it has been in the past.

The two leagues, the National and the American, will be organized with six teams in each league. In this way, twelve of the city's fifteen Engine Houses will have representation in this program. On each team, members of the local Department act as coaches and managers. An umpires staff is fully organized in the Department and these men will, in preparation of the coming season, again repeat their training school on rules and regulations of the national pastime. They will handle all of the scheduled league games as well as the elimination series and championship tournament.

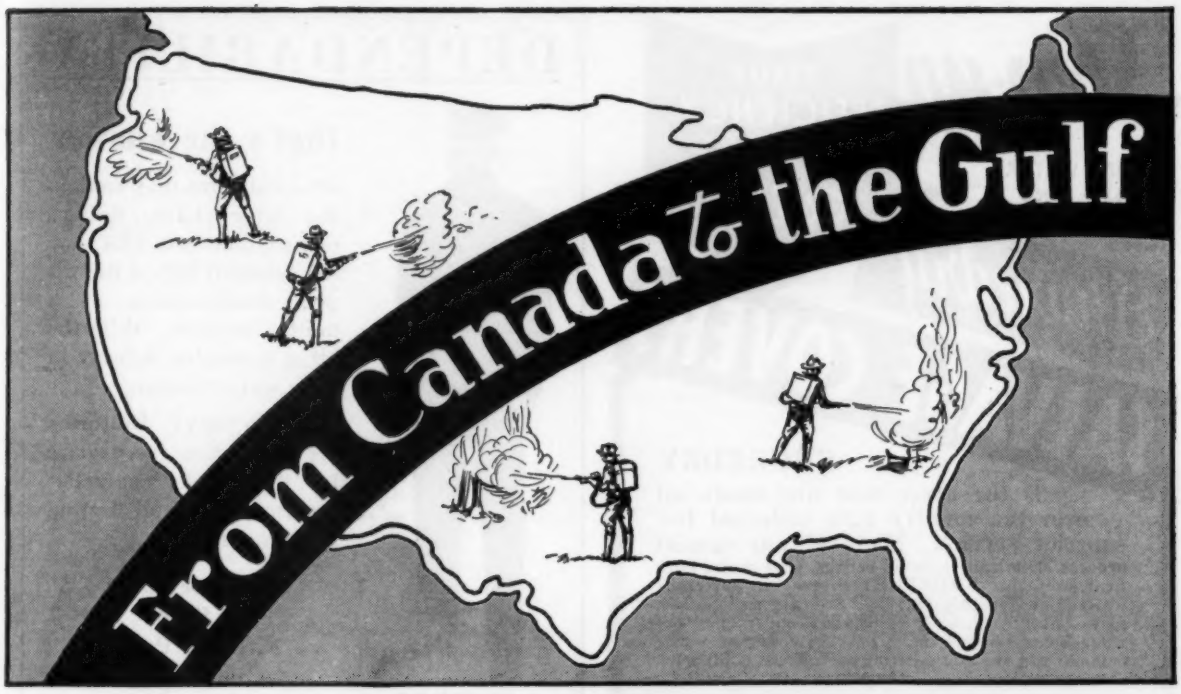
Each team will play a schedule of twenty-two games, with the winner in each league being awarded a pennant. The two pennant winners will then play for the Fire Department championship in a three-game "Little World Series." In past seasons, the "World Series" winner has been awarded a silver trophy which is put up for annual competition by the Box 7 Association, a local group of fire-fans. The Amateur Baseball Commission of the city also awards the members of the championship team with an individual trophy.

Uniforms for these teams are issued on the basis of fifteen to each engine house, and this expense is provided by local merchants and industrial plants on condition that the fire station number be placed on the front of the uniform and the donor's name on the back. This plan, of course, carries a certain advertising value which can be perpetuated from year to year because the suits are kept in the engine houses except when in use at games, and are only loaned to the boys

Chief Frank B. Ramby Awarding a League Pennant

The pennant is being awarded to the winners of the National League. In the group photograph are six fireman-managers, and six teams of fifteen boys each from six different engine houses.

at that time. The continued use of these uniforms from year to year is assured because they are carefully packed and stored in the Fire Department commissary during the winter months. This project was most successful during the past two seasons in this city and has developed a tremendous amount of interest, enthusiasm and inter-station rivalry. In fact, the whole plan has been so successful that it is reliably reported that the plan will be tried out in other cities during this coming season. It has the full approval of the National Baseball Federation.



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COMBINATION BRASS HANDLE FOR CARRYING TANK AND FOR HOLDING PUMP
EXTRA HEAVY TANK IS FORM FITTING TO FIT BACK SNUG AND FIRM
ALL TANK JOINTS LOCKED AND SOLDERED
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The Indian never fails to work. The heavy, solid brass pump consists of two seamless brass cylinders one working back and forth inside the other. There are no leather valves or packings to dry up or wear out. Pump throws unbroken, powerful 30 to 50 ft. stream or long, coarse spray. Curved 5 or 7 gallon tank snugly fits carrier's back and is built to withstand hard wear. These and other advantages are described in literature we will send anyone returning the coupon.

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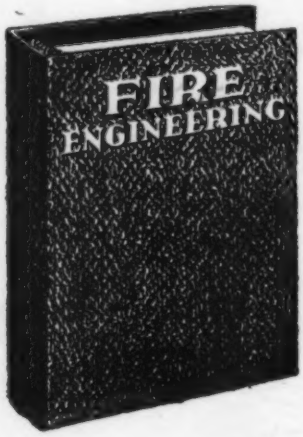

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Firemen Injured at Lynn, Mass., Fire

Ten firemen of the Lynn, Mass., department, were injured on March 17 while fighting a 2-alarm blaze that destroyed the West Lynn Boat Club property on Lamper's Wharf.

Captain Clarence Cann and John Purceli, of Engine Company No. 1, were plunged into the harbor when a section of flooring gave way. They were pulled out by comrades.

The blaze started in the locker room and spread rapidly. A number of racing shells, oars, and equipment were destroyed with a loss estimated at $20,000. Chief William F. Welch directed the firemen.

The fire was discovered at noon by the acting custodian of the club who sounded the first alarm. Deputy Chief Joseph E. Scanlon ordered the second alarm at 12:12 p.m. A high wind prevailed at the time. HARRY BELKNAP.

Control of Fire Adjusters Considered

Deputy Chief A. E. Miller of the Malden Fire Department, presided at a meeting of the Massachusetts Fire Prevention Club which was held in the Central Fire Station, Malden, on March 25.

Deputy State Insurance Commissioner Edmund S. Coggswell was the principal speaker. Among the subjects discussed was the regulation of public fire insurance adjusters. A committee was appointed to confer further with the commissioner in regard to this matter. This committee consists of Deputy Chief P. J. Creedon, Quincy; Deputy Chief Arthur L. Marshall, Cambridge; and Captain C. F. Bell, Brockton.

Luncheon was served in the fire station. The next meeting of the club will be held at fire headquarters in Brockton on April 29.

HARRY BELKNAP.

Two Killed by Apparatus Crash

Captain Frank O'Connor and a squadman of the Chicago Fire Department were killed shortly after midnight, March 16 in the heart of the Loop section, when a squad and an engine company crashed with a terrible impact while responding to a still alarm. Ten other firemen were injured, two seriously.

The two companies left the same fire station at 12:30 a.m. One driver took a different route in order to avoid "L" pillars on Wabash Avenue. Both companies approached the fatal intersection with sirens sounding and bells ringing. The squad car was struck on the tailboard by the heavy engine and hurled upon the sidewalk. Additional serious complications were avoided by an unidentified man who flagged Truck Company 6, also responding to the same alarm, in time to avoid that company striking the injured and dying firemen sprawled in the middle of the street.

Taxicab drivers, aided by pedestrians and the firemen who were not injured, rushed the unconscious men to the hospital.

Capt. O'Connor, more than twenty years in the department, is survived by his widow and two children. Squadman O'Connell is survived by his widow and two small children. ROBERT GREENOCK.

Louisville Has Improvement Program

Since the appointment of Chief Edward McHugh and Assistant Chief Sherrill Render, of Louisville, Ky., in January, 1934, a number of improvements are being made to the Fire Department.

All pumpers are to be rebuilt, modernized and standardized. Solid tires will be replaced by pneumatic tires. Chemical tanks, large and small, will be replaced by booster tanks and six-gallon hand pumps. Several pumpers have already been re-built in the department shops and some will be changed at the apparatus factories.

New ladder trucks are to be purchased, two new pumpers were placed in service last December, and a six-tank carbon dioxide engine was purchased and mounted on an International truck chassis.

Fire Prevention inspections are being conducted by the company instead of by individual men. On each Monday, an entire company in the First Battalion, both the on and off platoons, inspect designated buildings or factories in its district. Particular attention is paid to sprinkler systems. Tuesday is the inspection day for the Second Battalion, Wednesday for the third and so on. Many sprinkler installations were found to be in bad condition, and many outside fire department connections did not have the correct threads.

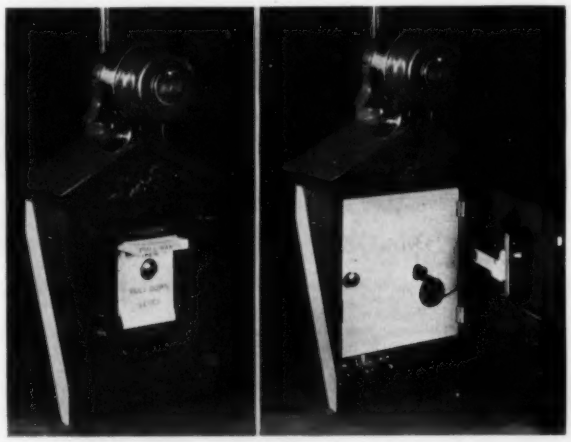
A school is held at headquarters three days a week to train the firemen in improved methods of fire fighting.

Warning Device To Check False Alarms

A device that sounds a loud warning signal, simultaneously with the "pulling of the hook," and can be conveniently mounted upon the peaks of the existing municipal fire alarm boxes, is a recent contribution to the war on false alarms.

This little device with a raucous voice, not easily confused with automobile horns or other street noises, is known as the Arrestolarm and is a product of the Gamewell Company, Newton, Mass. It is mechanically operated and will sound a signal of a minute's duration. A convenient winding handle is provided for the use of the fire department member who is charged with the rewinding of fire alarm boxes after each alarm.

The Arrestolarm is a small but powerful mechanism and the howler is mounted in a trim red finished metallic case, encircled by a stainless steel band which provides a sturdy mounting base as well as an attractive decorative effect. An opening in the front end of the unit accommodates the winding key. When not in use, a circular weather guard hangs in position over this opening. Underneath the other end, there is a louver to emit the sound vibrations. Running from the device itself at the top of the fire alarm box is a flexible steel shaft which connects with the pull-lever of the box signal movement. When the box is operated, the pulling down on the lever pushes upward the steel wire inside the flexible shaft so that it trips the mechanism of the Arrestolarm.



Device for Sounding a Loud Warning Signal, Mounted on Fire Alarm Box

The left view shows new "Arrestolarm" mounted on top of the latest Gamewell Quick Action Door Box. Upon the tripping of the fire alarm mechanism as a result of the pull handle being operated, the unit simultanously sounds a loud warning of one minute's duration to attract the attention of nearby police, passersby, or local residents. Right view shows the fire alarm box with outer door open, so as to show the "Arrestolarm" tripping device which is mounted directly below the pull lever of the box mechanism, shown in the center of the white movement case. Operation of this pull lever pushes steel shaft inside of flexible cable connected to "Arrestolarm" unit through the top of the fire alarm box. This causes the release of the howler.

It is not expected that this device will completely eliminate false alarms, but it is felt that it will tend to reduce the number from the most troublesome false alarm spots by attracting the attention of police, passersby, or local residents to the box in time to observe the culprit. The standard fits all modern boxes having the quick action or Cole Keyguard types of doors. As a special unit, the Arrestolarm can be adapted to any existing municipal fire alarm boxes.

Wareham, Mass., fire district plans the purchase of new fire apparatus and an extension of the water system.

Fall River, Mass., plans to spend $9,500 for purchase of a new motor pumping engine and $1,200 for a chief's car.

CONVENTION DATES

April 15—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. April Meeting, the St. George Club, Westmount. Secretary-Treasurer, Robert Harrington, Chief, Fire Department, McColl-Frontenac Oil Co., Ltd., Windsor Hotel, Montreal, Can.

April 17—FIRE CHIEFS' EMERGENCY PLAN (of Westchester County). Regular Meeting, Fire Headquarters, Tarrytown, N. Y. Secretary, Capt. Walter M. Dawkins, 72 Thatcher St., Harrison, N. Y.

April 17-20—ARIZONA STATE FIREMAN'S ASSOCIATION. 12th Annual Convention, Yuma, Ariz. Secretary-Treasurer, H. W. Reggin, Prescott, Ariz.

April 24—FIRE CHIEFS' EMERGENCY PLAN OF FAIRFIELD COUNTY. Regular Meeting, Danbury, Conn. Secretary, John Moehring, Toms Road, Stamford, Conn.

April 29—MASSACHUSETTS FIRE PREVENTION CLUB. Regular Meeting, Fire Headquarters, Brockton, Mass. Secretary-Treasurer, Chief Thomas J. McGarrick, Revere, Mass.

May 8-10—GEORGIA STATE FIRE COLLEGE. Fire College, Atlanta, Ga. Address, Harry Phillips, Assistant Fire Marshal, Dept. of Fire, 166 Alabama St., S. W., Atlanta, Ga.

May 13-17—NATIONAL FIRE PROTECTION ASSOCIATION. 39th Annual Meeting, Atlanta, Ga. Secretary-Treasurer and Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

May 16—NEW JERSEY MUNICIPAL SIGNAL ASSOCIATION. Next Meeting, Belleville, N. J. Corresponding Secretary, Alexander A. Sullivan, Bayonne, N. J.

May 17-18—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 9th Annual Fishing Party and Picnic, Lake Morgan, Que. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd., Windsor Hotel, Montreal.

June 1—MID-HUDSON-HARLEM VALLEY FIRE CHIEFS' ASSOCIATION. Regular Meeting, Mahopac, N. Y. Secretary, Henry F. Drake, Clinton Corners, N. Y.

June 3-7—SOUTH DAKOTA STATE FIREMEN'S ASSOCIATION. 51st Annual Convention and 6th Annual Fire School, Hot Springs, S. D. Secretary, M. C. Sullivan, Parkston, S. D.

June 5-6—IOWA ASSOCIATION OF FIRE FIGHTERS. 13th Annual Convention, Davenport, Ia. Secretary-Treasurer, William Hottle, Des Moines, Ia.

June 11-14—ILLINOIS FIRE COLLEGE. 11th Fire College, under auspices of Illinois Firemen's Association. Address, Assistant Chief Roy W. Alsip, Secretary, Illinois Association, Fire Department, Champaign, Ill.

June 15—LEBANON COUNTY FIREMEN'S ASSOCIATION. 13th Annual Convention, Lebanon, Pa. Chief Fire Marshal, A. S. Stauffer, Palmyra, Pa.

June 17-18—MISSOURI VALLEY FIRE CHIEFS' ASSOCIATION. Annual Meeting, Hotel Paxton, Omaha, Neb. Secretary, Chief Ray Tiller, Waterloo, Ia.

June 17-18—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 30th Annual Convention, Bennettsville, S. C. Secretary-Treasurer, Chief John H. Wohlers, Charleston, S. C.

June 17-19—OKLAHOMA STATE FIREMEN'S ASSOCIATION. 41st Annual Conention, Oklahoma City, Okla. Secretary-Treasurer, Charles Slemp, 820 East 19th St., Oklahoma City.

June 18-20—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 46th Annual Convention, Monticello, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y.

June 19—NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. 62nd Annual Convention, Berea, Ohio. Assistant Secretary, R. T. Boone, Second Assistant Chief, Berea.

June 19-21—MARYLAND STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Oakland, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 19-22—NORTHWEST FIRE SCHOOL. 8th Annual School, Spokane, Wash. Chairman, General Committee of Arrangements, Chief W. P. Payne, Spokane, Wash.

June 20—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Flanders Hotel, Ocean City, N. J. Secretary, Fred A. Trowbridge, 29 South Street, Morristown, N. J.

June 20-22—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 13th Annual Convention and 6th Fire College, Santa Fe, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

June 20-22—ASSOCIATED MUNICIPAL SIGNAL SERVICES. Group Meeting, Municipal Signal Associations, Hotel Campbell, Poughkeepsie, N. Y. Secretary-Treasurer, Edwin P. Cochran, 420 Yale Ave., New Haven, Conn.

June 21-22—EASTERN ASSOCIATION OF FIRE CHIEFS. 8th Annual Convention, Flanders Hotel, Ocean City, N. J. Secretary, Charles E. Clark, P. O. Box 217, Wayne, Pa.

June 25-26—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. 8th Annual Convention, Hotel Dempsey, Macon, Ga. Secretary-Treasurer, Chief R. S. Baughan, Norfolk, Va.

June 25-27—MICHIGAN STATE FIRE CHIEFS ASSOCIATION. Annual Convention, John R. Murphy Hotel, Mt. Clemens, Mich. Secretary, George Dansbury, Grosse Pointe Farms, Mich.

June 25-27—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 13th Annual Convention, New Bedford, Mass. Headquarters, Hotel New Bedford; Exhibits, New Bedford Armory. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.

June 26-27—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 3rd Annual Convention, Quebec, Que., Can. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd., Windsor Hotel, Montreal.

July—MICHIGAN STATE FIREMEN'S ASSOCIATION. 61st Annual Convention and 7th Annual Fire College, Detroit, Mich., probably in middle of July. Secretary-Treasurer, Statistician and Director, Fire College, Charles V. Lane, Charlotte, Mich.

July 16-17—MARITIME FIRE CHIEFS' ASSOCIATION. 21st Annual Convention, Moncton, N. B. Secretary-Treasurer, Capt. K. J. MacRae, Salvage Corps and Fire Police No. 1, Saint John, N. B.

July 29-Aug. 1—WEST VIRGINIA FIRE SERVICE EXTENSION SCHOOL. 5th Annual School, West Virginia University, Morgantown, W. Va. Address, Secretary, W. Va., Fire Chiefs' Ass'n., C. B. Powell, Romney, W. Va., or Prof. Lewis V. Carpenter, Director, at University.

July 30—WEST VIRGINIA FIRE CHIEFS' ASSOCIATION. 4th Annual Meeting, West Virginia University, Morgantown, W. Va. Secretary, Chief C. B. Powell, Romney, W. Va.

Aug. 12-13—PANHANDLE FIREMEN'S ASSOCIATION. Annual Convention, Plainview, Tex. Secretary-Treasurer, Quincy Wilson, Vernon, Tex.

Aug. 13-15—WISCONSIN PAID FIREMEN'S ASSOCIATION. 28th Annual Convention, Wausau, Wis. Secretary-Treasurer, William H. Schultz, Sheboygan, Wis., Fire Department.

Aug. 13-16—DOMINION ASSOCIATION OF FIRE CHIEFS. 27th Annual Convention, Brockville, Ont., Can. Secretary, Chief James Armstrong, Box 56, Kingston, Ont.

Aug. 16-19—WEST VIRGINIA FIREMEN'S ASSOCIATION. 35th Annual Convention, White Sulphur Springs, W. Va. Secretary, T. F. Vernon, Keyser, W. Va.

Aug. 18-21—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. 17th Annual Convention, Binghamton, N. Y. Secretary-Treasurer, Frank A. Emden, 1403 Mather Ave., Utica, N. Y.

Sept. 2-5—KENTUCKY FIREMEN'S ASSOCIATION. 16th Annual Convention. Georgetown, Ky. Secretary, W. S. Lipscomb, Fire Department Headquarters, Lexington, Ky.

Sept. 3-6—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 13th Annual Convention, Glenwood Mission Inn and Municipal Auditorium, Riverside, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Ave., San Diego, Cal.

Sept. 7—MID-HUDSON-HARLEM VALLEY FIRE CHIEFS' ASSOCIATION. Regular meeting, Beacon, N. Y. Secretary, Henry F. Drake, Clinton Corners, N. Y.

Sept. 24-27—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 63rd Annual Convention, Hotel Andrew Johnson, Knoxville, Tenn. Secretary-Treasurer, Ex-Chief James J. Mulcahey, Yonkers, N. Y.; Chairman, Exhibit Committee, Chief M. T. Kenedy, East Orange, N. J.

Oct. 1-3—FIREMEN'S ASSOCIATION OF PENNSYLVANIA. 56th Annual Convention, Connellsville, Pa. Secretary, Charles E. Clarke, Wayne, Pa.

Oct. 15-17—ILLINOIS FIREMEN'S ASSOCIATION. 48th Annual Convention, Waukegan, Ill. Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill., Fire Department.

Chief Callahan Has 20th Anniversary

H. J. Callahan, Chief of the Fort Dodge, Ia., Fire Department, completed twenty years service as a member of the department. A dinner was prepared at the station by members of the department and their wives. He was presented with a Gladstone bag.

Box 52 Holds Meeting

Deputy Chief John J. Kenney, of the Boston Fire Department; Harold S. Walker, of the National Fire Protection Association, and Ex-Assistant Chief Thomas F. Dougherty, New York Fire Department, were the speakers at the meeting of the Box 52 Association of Boston, Inc., held on March 20 at the Boston Chamber of Commerce Building. President P. Hildreth Parker directed the meeting and there was a large attendance. Mr. Walker reviewed the large fires of the past year and Deputy Chief Kenney told of waterfront fire problems and fighting fires on shipboard. Chief Dougherty related his experiences in the famous Windsor Hotel Fire in New York.

Townsend to Head Fire Prevention Committee

R. E. Haylett, Chairman of the American Petroleum Institute's Central Committee on Refinery Technology has appointed C. E. Townsend, Sun Oil Company, Philadelphia, Chairman of the Institute's Committee on Fire Prevention in Refineries. D. V. Stroop, American Petroleum Institute, New York, remains Secretary. Others appointed by Mr. Haylett to the committee for 1935 include:

M. B. Anfenger, Standard Oil Company of California, San Francisco; C. H. Bunn, Jr., Standard Oil Development Company, Elizabeth; H. W. Camp, Empire Oil and Refining Company, Tulsa; C. J. Cutting, The Atlantic Refining Company, Philadelphia; James H. Herbert, The Standard Oil Company (Ohio), Cleveland; William Hildebrandt, the Bartles-Maguire Oil Company, East Chicago, Ind.; Harold M. Hoe, Gulf Refining Company, Pittsburgh; W. W. Lowe, H. L. Doherty & Co., New York; Walter Miller, Continental Oil Company, Ponca City; B. A. Moeller, General Petroleum Corporation of California, Vernon; C. J. Nobmann, Shell Oil Company, San Francisco; C. D. Norris, The Texas Company., New York; G. F. Prussing, Union Oil Company of California, Los Angeles; E. D. Seymour, Socony-Vacuum Oil Company, New York; C. W. Smith, Standard Oil Company (Ind.) Chicago; D. E. Sullivan, the Pure Oil Company, Chicago; T. D. Tifft, Sinclair Refining Company, New York; and H. J. Wilson, Associated Oil Company, San Francisco.

A Line of Shut-off Nozzles that WILL NOT LEAK

For a long time every Fire Chief and Master Mechanic has been looking for a Shut-Off Nozzle that would not leak. Now the hitherto unattainable has been reached. Buckeye has perfected *a complete line* of simplified, practical nozzles that WILL NOT LEAK. There is a type and size to fit the needs of any department and we will welcome the opportunity to demonstrate them to you.

BUCKEYE
Shut-off Nozzles · Roto-Rays · Whistles

POTENT FACTS

They *will not leak.*

They will not open or close themselves under pressure.

Their one and only adjustment is simplicity itself.

All working parts are readily accessible.

Every Buckeye Shut-off nozzle and each integral part bears our unconditional guarantee against defective materials or workmanship.

BUCKEYE IRON & BRASS WORKS
324 East Third St., Dayton, Ohio

Please send further information on your new line of Shut-off Nozzles.

Name .....

Street .....

City ..... State .....

The "Special" Line of
UNIFORMS & FIRE CLOTHES
For Winter and Summer Wear

Uniforms — **Shoes**
Uniform Overcoats — **Jackets**
Boots — **Shirts**
House Pants
Bunker Coats and Pants
(with or without detachable lining)

All Uniforms and House Pants are Made to Measure and

UNION MADE

We are patentees of the detachable feature of firemen's coat which provides a heavy blanket plaid lining (70% wool) which is removable in warm weather. The most satisfactory garment for winter and summer wear. Water-proof bunker pants with detachable lining in same materials.. The outer water-proofed fabric will not absorb water, and ice will not cling to it. Very tough and durable, will turn 10 penny nail. Our garments are the result of years of study and experimentation. Bunking outfits and coats without detachable lining if preferred. We have them all—a complete line for firemen. Write, or wire if you are in the market for immediate delivery or send for catalog showing our complete line. We solicit opportunity of bidding on city orders.

Illustrating Fireman's coat and bunking pants, both with detachable lining.

SPECIAL CLOTHING CO., Inc.
4543 Ravenswood Avenue
Chicago, Ill.

Everything BULLARD on Safety

BULLARD

Hard Boiled Fire Helmet. Comfortable; light weight; attractive appearance; heat resisting; a non-conductor of electricity; and blow resisting. Write for catalog.

HARD BOILED HATS

NATION-WIDE SERVICE

EAST
NEW YORK W. S. Wilson Corporation - 123 Varick St.
PITTSBURGH Safety First Supply Co. - Brady Building
PHILADELPHIA J. A. Hunt Co. - 2036 Sansome St.
CLEVELAND Safety Clothing Co. - 3904 Payne Ave.
BRAINTREE, MASS. Direct Sales Co., 108 President Road

SOUTH
CHATTANOOGA, TENN. C. D. Center Company, Chattanooga Bank Building

MID-WEST
DETROIT C. H. Dackson Company - 2885 East Grand Boulevard
CHICAGO E. D. Bullard Company - 215 South Leavitt Street
GREEN BAY, WIS. Safety Service Company - 108 No. Quincy Street
DULUTH W. P. & R. S. Mars Company - 324 W. Michigan Street
HOUSTON E. D. Bullard Company - 1 Main Street

WEST
SAN FRANCISCO E. D. Bullard Company - 273 Eighth Street
LOS ANGELES E. D. Bullard Company - 1239 South Olive Street
SALT LAKE CITY E. D. Bullard Company - 1439 Yalecrest Avenue

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MOTOR FIRE APPARATUS

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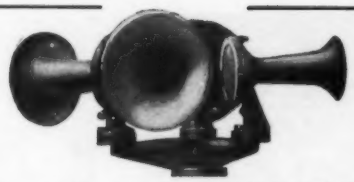
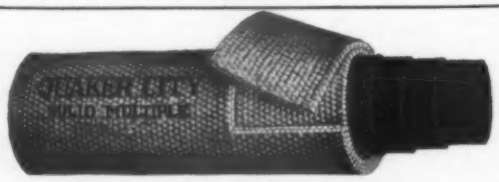


FEDERAL COMPRESSED AIR HORNS

The Modern Fire Alarm which is instantly recognized above the other city noises. For any type of fire alarm, electric or air, write—

FEDERAL ELECTRIC COMPANY, Inc.
8702 S. STATE STREET, CHICAGO, ILL.



QUAKER CITY FIRE HOSE

50 years have taught us a lot about making fire hose. This is your advantage when you buy it.

QUAKER CITY RUBBER COMPANY
MUNICIPAL FIRE HOSE SALES OFFICE:
Fox Bldg., 16th and Market Sts., PHILADELPHIA
Factory: Wissinoming, Philadelphia, Pa.

COVER'S NOD and SHAKE GAS MASK

Carry It in Pocket. Slip on in a Jiffy. Positive Protection to Eyes Against Smoke.

Price $48 per Dozen

Upon receipt of $4.00 one will be forwarded as a sample, postpaid.

H. S. COVER
Station A
SOUTH BEND, IND.

HEWITT-GUTTA PERCHA FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose

Manufactured by
HEWITT RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

BRUNSSEN CAPS

First Choice in Many Fire Departments

There seems to be a trend toward the 8 point cap for fire departments. It is one of the wide variety of caps by Brunssen. CATALOG AND PRICES ON REQUEST.

GEORGE BRUNSSEN CO., Inc.
92-96 Bleecker Street New York City

Bi-Lateral Fire Hose

The one hose that does not require frequent replacements. Always reliable for fire service no matter how old, if the jackets are intact.

Lined with three rubber tubes.

BI-LATERAL FIRE HOSE CO.
15 Park Row, New York, N. Y.
20 N. Wacker Drive, Chicago, Ill.

Here I is suh!

SAMBO

Puts Out
CHIMNEY FIRES
Quickly

We will send an initial order of 3 doz. boxes of SAMBO and bill you $18. You can pay in 30 days.

THE GENERAL PRODUCTS COMPANY, INC.
NORWALK, CONN.

New York City Reduces Its Fire Losses

New York City had 758 more fires in 1934 than it did the year previous, but the fire losses were $9,426,515, a reduction of $297,000 over the 1933 totals, according to the annual report of the New York Fire Department, prepared by Chief John J. McElligott. The per capita fire loss was $1.26 as against $1.32 in 1933.

Records show that 99.3 per cent of the 27,056 fires were confined to the point of origin.

A considerable portion of the report dealt with the troubles of the department in coping with traffic and malicious false alarms. Traffic problems gave the department such concern that each fire company was provided with a book of summonses with which to hale motorists to court for failing to give fire apparatus the right of way, for blocking fire hydrants, and approaching too close to the fire. There were 134 apparatus accidents on the highways and one fireman was killed while answering a false alarm. Eighty-four of the ninety-six motorists hailed to court by firemen were found guilty.

Chief McElligott stated:

"There were 13,011 malicious false alarms, or approximately thirty per cent of the total street box alarms for the year. The campaign against this false alarm epidemic was partially successful during the latter half of the year, but nothing near the results that were hoped for."

Massachusetts Chiefs Plan Schedule

The Fire Chiefs' Club of Massachusetts will hereafter hold five meetings a year in Boston and three meetings at other points in the state, according to a motion adopted at the meeting held in Worcester on March 20.

Chief Fred A. Clark, of Attleboro, presided at the luncheon held in the Hotel Bancroft preceding the meeting. Seated at the head table with the President were the Secretary, Chief William H. Hill, of Belmont; George O. Mansfield, Chief State Fire Inspector; Ex-Chief Daniel F. Sennot, Boston; Chief Charles L. McCarthy, Worcester; Ex-Assistant Chief Thomas F. Dougherty, New York, and Hayward Sweet, Attleboro.

Congratulations were extended to Chief Frank E. Tracy, of Woburn, upon celebrating his eightieth birthday. Among those who spoke briefly or took part in discussion were Chief Ray D. Wells, Falmouth; Chief Richard A. Magee, Truro; Chief Arthur E. Soper, Mansfield; Chief Patrick J. Hurley, Holyoke; Chief George L. Johnson, Waltham; Chief Herbert C. Root, Springfield; Chief Robert E. Tappan, Gardner; Chief David A. De Courcy, Winchester, and Stephen C. Garrity, State Fire Marshal of Massachusetts.

HARRY BELKNAP.

Teaching Fire Prevention Through Magic

J. W. Just, of the Fire Prevention Department of the Western Actuarial Bureau, had developed a forty-five minute program which includes many tricks of magic, to teach fire prevention to school children.

Included in the novelties presented is a sway-backed replica of the notorious O'Leary cow which caused the great Chicago fire. The cow produces real milk, which subsequently turns out to be "vanishing cream," as it disappears from the scene without leaving a trace.

Mr. Just has had many years experience in appearing before school audiences in the middle west as a part of the fire prevention program of the stock fire insurance companies.

A Correction

In the account of the Directors' Meeting of the International Association of Fire Chiefs appearing in the March issue of FIRE ENGINEERING, mention was made of the discussion of the affairs of the Eastern Association of Fire Chiefs, in which the late Treasurer of the association was referred to. This should have read the late Secretary. The Treasurer of the association was, and still is, Chief Richard L. Smith, Pittsburgh, Pa.

Hopkinsville, Ky., reports a per capita loss of sixty-seven cents for 1934, the lowest since 1927. Chief J. W. East stated that the department did not have a serious accident or injury during the year.

Aerial Ladder Tested at Cambridge, Mass.

There was a large attendance at the demonstration of the new Pirsch aerial tower ladder truck in front of fire headquarters in Cambridge, Mass., on the afternoon of March 9. The new truck will be known as Ladder 1, replacing an old ladder truck.

Test of Pirsch Tower

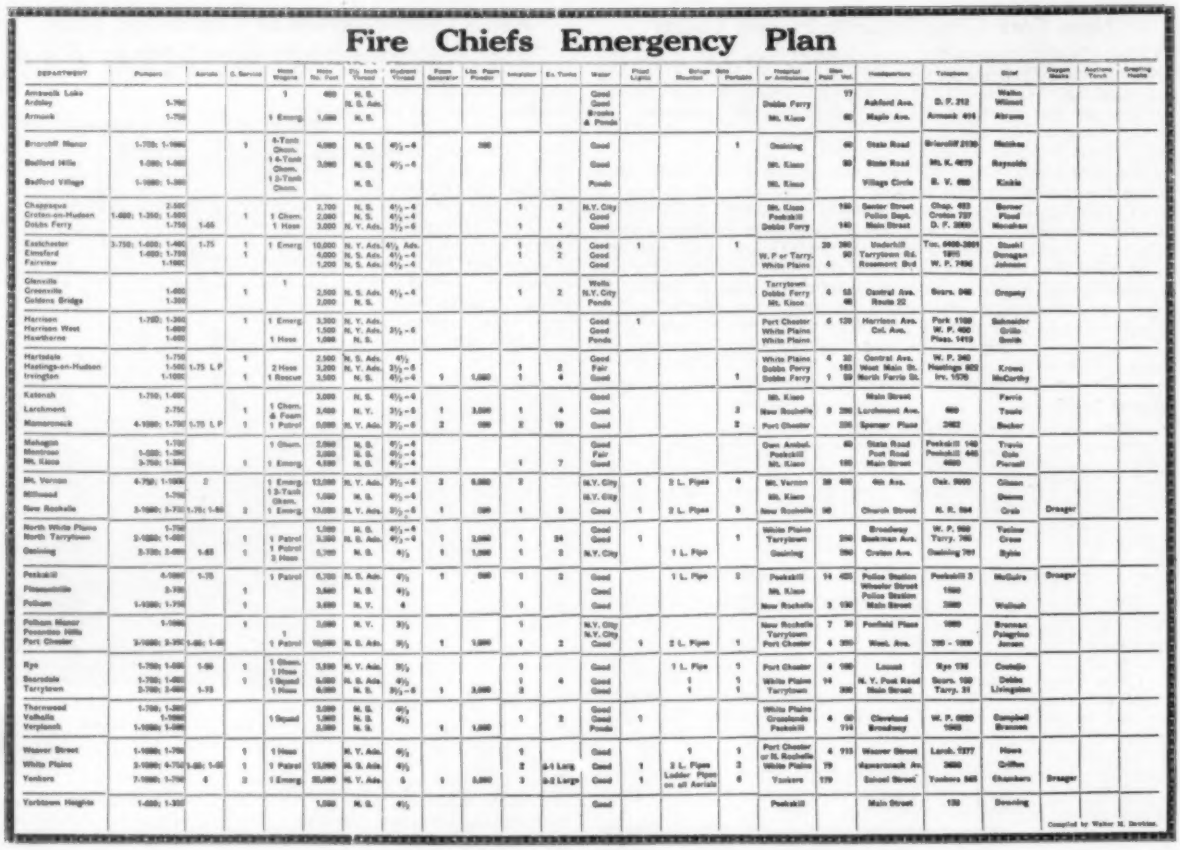
Chief Herman E. Gutheim, of the Cambridge Fire Department, acted as host. A buffet luncheon was served in the basement of the fire house.

Among the Chiefs present were the following: Chief Henry A. Fox, Deputy Chief Thomas H. Downey, Deputy Chief William F. Quigley, and Edward E. Williamson, Superintendent of the Maintenance Division, Boston Fire Department; Chief Selden R. Allen, Brookline, Past-President of the International Association of Fire Chiefs; Chief Daniel B. Tierney, Arlington, Past-President of the New England Association of Fire Chiefs; Chief Frank E. Newman, Melrose; Chief Ernest N. Barlett, Billerica; Chief Orville O. Ordway, Reading; Chief Charles L. McCarthy, Worcester; Chief William C. Mahoney, Peabody; Chief Frank Dickinson, Brockton; Chief Thomas H. Slaman, Wellesley; Chief Clarence R. Randlett, Newton; Chief George L. Johnson, Waltham; Chief William J. Sands, Quincy; Chief William H. Hill, Belmont; Chief Manuel Miguel, Manchester; Chief Homer R. Marchant, Gloucester; Chief John W. O'Hearn, Watertown; Chief Frank E. Tracy, Woburn; Chief Warren H. Belcher, Winthrop; Chief Michael Lawton, Middletown, Conn.; Chief William H. Welch, Lynn; Chief James S. Warnock, Swampscott; Superintendent Peter E. Walsh, Boston Protective Department; Percy C. Charnock, of the New England Insurance Exchange; and P. Hildreth Parker, of the New England Telephone & Telegraph Company.

HARRY BELKNAP.

Demonstrating the Ladder at Cambridge

Holyoke, Mass., is expecting delivery of a Mack aerial ladder and a 750-gallon triple combination pumper.



Fire Chiefs Emergency Plan

DEPARTMENT	Pumpers	Aerials	C. Service	Auto Wagons	Hose No. Feet	2½ Inch Thread	Hydrant Thread	Foam Generator	Lbs. Foam Powder	Inhalator	Ex. Tanks	Water	Floor Lights	Bridge Gas Mantles	Gas Portable	Hospital or Ambulance	Men Paid	Vol.	Headquarters	Telephone	Chief	Oxygen Masks	Acetylene Torch	Creeping Masks
Amawalk Lake				1	400	N. S.						Good						17			Walter			
Ardsley	1-750					N. S. Ads.						Good				Dobbs Ferry			Ashford Ave.	D. F. 212	Wilmot			
Armonk	1-750			1 Emerg.	1,000	N. S.						Brooks & Ponds				Mt. Kisco		60	Maple Ave.	Armonk 414	Abrams			
Briarcliff Manor	1-750; 1-1000		1	6-Tank Chem.	4,000	N. S.	4½–6		300			Good			1	Ossining		60	State Road	Briarcliff 2130	Mathias			
Bedford Hills	1-500; 1-500			1 4-Tank Chem.	3,000	N. S.	4½–6					Good				Mt. Kisco		50	State Road	Mt. K. 4079	Reynolds			
Bedford Village	1-1000; 1-500			1 2-Tank Chem.		N. S.						Ponds				Mt. Kisco			Village Circle	B. V. 480	Kinkle			
Chappaqua	2-500																							
Croton-on-Hudson	1-600; 1-350; 1-500		1	1 Chem.	2,700	N. S.	4½–6			1	2	N.Y. City				Mt. Kisco		160	Senter Street	Chap. 493	Berner			
Dobbs Ferry	1-750	1-65		1 Hose	2,000	N. S.	4½–6			1	4	Good				Police Dept.		140	Main Street	Croton 737	Flood			
					3,000	N. Y. Ads.	2½–6					Good				Dobbs Ferry				D. F. 2000	Monahan			
Eastchester	3-750; 1-600; 1-400	1-75	1	1 Emerg.	10,000	N. Y. Ads.	4½ Ads.			1	4	Good	1		1		20	260	Underhill	Tom. 0400-3001	Stuehl			
Elmsford	1-600; 1-750		1		4,000	N. S. Ads.	4½–6			1	2	Good					4	50	Tarrytown Rd.	1915	Donegan			
Fairview	1-1000				1,200	N. S. Ads.	4½–6					Good				W. P. or Terry. White Plains			Rosemont Blvd	W. P. 7496	Johnson			
Glenville				1								Wells				Tarrytown								
Greenville	1-600		1		2,500	N. S. Ads.	4½–6			1	2	N.Y. City				Dobbs Ferry	6	55	Central Ave.	Scars. 048	Cropsey			
Goldens Bridge	1-300				2,000	N. S.						Ponds				Mt. Kisco		48	Route 22					
Harrison	1-750; 1-300		1	1 Emerg.	3,300	N. Y. Ads.						Good	1			Port Chester	6	120	Harrison Ave. Cor. Ave.	Park 1100	Schneider			
Harrison West	1-600				1,500	N. Y. Ads.	2½–6					Good				White Plains				W. P. 400	Grillo			
Hawthorne	1-600			1 Hose	1,000	N. S.						Ponds				White Plains				Plaza 1410	Smith			
Hartsdale	1-750		1		2,500	N. S. Ads.	4½									White Plains	4	32	Central Ave.	W. P. 240				
Hastings-on-Hudson	1-500; 1-75 L P			2 Hose	3,200	N. Y. Ads.	2½–6			1	2	Fair				Dobbs Ferry	4	163	West Main St.	Hastings 822	Krows			
Irvington	1-1000		1	1 Rescue	3,500	N. S.	4½–6	1	1,000	1	4	Good			1	Dobbs Ferry	1	59	North Ferris St.	Irv. 1576	McCarthy			
Katonah	1-750; 1-400				3,000	N. S.	4½–6					Good				Mt. Kisco			Main Street		Ferris			
Larchmont	2-750		1	1 Chem. & Foam	3,400	N. Y.	2½–6	1	3,000	1	4	Good			2	New Rochelle	9	250	Larchmont Ave.	460	Towle			
Mamaroneck	4-1000; 1-750	1-75 L P	1	1 Patrol	6,000	N. Y. Ads.	2½–6	2	600	2	10	Good			2	Port Chester		225	Spencer Place	2462	Becker			
Mahopac	1-750			1 Chem.	2,500	N. S.	4½–6					Good				Own Ambul.		60	State Road	Peekskill 140	Travis			
Montrose	1-500; 1-300				2,000	N. S.	4½–6					Fair				Peekskill		60	Post Road	Peekskill 445	Cole			
Mt. Kisco	1-750; 1-500		1	1 Emerg.	4,500	N. S.	4½–6			1	7	Good				Mt. Kisco		150	Main Street	4600	Parnell			
Mt. Vernon	4-750; 1-1000	2		1 Emerg.	12,000	N. Y. Ads.	2½–6	2	5,000	2		N.Y. City	1	2 L. Pipe	4	Mt. Vernon	39	400	4th Ave.	Oak. 0000	Gibson			
Millwood	1-750			1 2-Tank Chem.	1,000	N. S.	4½–6					N.Y. City				Mt. Kisco					Downs			
New Rochelle	3-1000; 3-750	1-75; 1-50	2	1 Emerg.	12,000	N. Y. Ads.	2½–6	1	300	1	5	Good	1	2 L. Pipe	3	New Rochelle	90		Church Street	N. R. 864	Crab	Draeger		
North White Plains	1-750				1,500	N. S.	4½–6					Good				White Plains			Broadway	W. P. 960	Yetter			
North Tarrytown	2-1000; 1-500		1	1 Patrol	3,250	N. S. Ads.	4½–6	1	2,000	1	24	Good	1		1	Tarrytown		250	Beekman Ave.	Terry. 745	Crane			
Ossining	3-750; 2-500	1-65	1	1 Patrol	5,750	N. S.	4½	1	1,000	1	2	N.Y. City		1 L. Pipe		Ossining		250	Croton Ave.	Ossining 701	Sykes			
				2 Hose																				
Peekskill	4-1000	1-75		1 Patrol	6,750	N. S. Ads.	4½	1	500	1	3	Good		1 L. Pipe	2	Peekskill	14	425	Police Station Wheeler Street	Peekskill 3	McGuire	Draeger		
Pleasantville	2-750		1		3,000	N. S.	4½					Good				Mt. Kisco			Police Station	1500				
Pelham	1-1000; 1-750		1		3,000	N. Y.	4			1		Good				New Rochelle	3	130	Main Street	2000	Wallush			
Pelham Manor	1-1000		1		3,000	N. Y.	2½			1		N.Y. City				New Rochelle	7	30	Penfield Place	1000	Brennan			
Pocantico Hills				1								N.Y. City				Tarrytown					Pelegrino			
Port Chester	3-1000; 2-750	1-65; 1-50		1 Patrol	10,000	N. S. Ads.	2½	1	1,000	1	2	Good	1	2 L. Pipe	1	Port Chester	4	200	West Ave.	700 – 1000	Jensen			
Rye	1-750; 1-500	1-50	1	1 Chem.	3,500	N. Y. Ads.	2½			1		Good		1 L. Pipe	1	Port Chester	4	150	Locust	Rye 136	Costello			
	1-750; 1-500			1 Hose						1				1	1									
Scarsdale	1-750; 1-500		1	1 Squad	6,000	N. S. Ads.	4½			1	4	Good		1	1	White Plains	14		N. Y. Post Road	Scars. 100	Dobbs			
Tarrytown	2-750; 2-500	1-75		1 Hose	6,000	N. S.	2½–6	1	2,000	2		Good		1	1	Tarrytown		300	Main Street	Terry. 31	Livingston			
Thornwood	1-750; 1-500				3,000	N. S.	4½					Good				White Plains								
Valhalla	1-1000			1 Squad	1,000	N. S.	4½			1	2	Good	1			Grasslands	4	60	Cleveland	W. P. 0220	Campbell			
Verplanck	1-1000; 1-500				2,000	N. S.		1	1,000			Ponds				Peekskill		114	Broadway	1040	Brannon			
Weaver Street	1-1000; 1-750		1	1 Hose		N. Y. Ads.	4½			1				1	1	Port Chester or N. Rochelle	4	113	Weaver Street	Larch. 1277	Howe			
White Plains	2-1000; 4-750	1-65; 1-50	1	1 Patrol	13,000	N. S. Ads.	4½			2	6-1 Lung	Good	1	2 L. Pipes	3	White Plains	19		Hamaroneck Ave.	3600	Griffen			
Yonkers	7-1000; 1-750	6	2	1 Emerg.	35,000	N. Y. Ads.	6	1	3,000	3	8-2 Lungs	Good	1	Ladder Pipes on all Aerials	6	Yonkers	170		School Street	Yonkers 565	Chambers	Draeger		
Yorktown Heights	1-500; 1-300				1,000	N. S.	4½					Good				Peekskill			Main Street	130	Downing			

Compiled by Walter H. Devlin.

Chart of Giving Details of Westchester County, N. Y., Fire Departments Prepared by Fire Chiefs' Emergency Plan

Westchester Chiefs Hear About Accidents

The members of the Fire Chiefs' Emergency Plan listened to an address setting forth the hazards of automobile traffic by Mr. Fellows, of the Westchester Lighting Company, at its regular meeting, held at Fire Headquarters of the Eastchester Township Fire Department, Tuckahoe, N. Y., on Wednesday evening, March 20. Mr. Fellows said that, while the automobile is an indispensable servant, it has exacted a terrible toll in loss of life, and much of this has been caused by the carelessness and indifference of pedestrians in crossing streets at other than the crosswalks, when the lights are red, and so on. Children playing in the streets were also a prolific source of accident, he pointed out. During 1934 there had been total fatalities in the United States of 101,640, divided as follows: in industry, 15,800; public accidents, 17,850; in the home, 32,220, and from motor vehicles, 35,770. The speaker made an appeal for greater care in all matters involving dangerous practices. He was given a rising vote of thanks at the conclusion of his address.

The Secretary reported the illness of Chief Victor M. Veit, of Stamford, Conn., and of Chief Grabb, of New Rochelle. He read a letter of appreciation from Chief Towle, of Larchmont, "Father" of the plan, who is on the road to recovery.

Judge Hoop cited a decision in a suit up-state, in the matter of compensation for injuries to a volunteer answering call from an outside community. In this case the call for help came from a person not connected officially with the village. The decision was that any adult making the call was sufficient. This, Judge Hoop said, clarifies the matter legally as to who may make the call.

A chart, showing details of all of the Fire Departments of Westchester County, prepared by Secretary Dawkins, was distributed to the members. This chart is reproduced herewith.

The members were addressed by Fire Commissioner McNamara of Eastchester Township.

President Krows appointed as the Nominating Committee Chiefs Chambers (Chairman), Griffen, Gibson and Outhouse, and Entertainment Committee, Chief Steuhl (Chairman) Ex-Chief Travis, Judge Hoop, Secretary Dawkins and Chief McCullough.

Moving pictures showing the extinguishment of gasoline and oil fires were shown by David Leerburger, of Walter Kidde & Co.

On the invitation of Chief Livingston, of Tarrytown, N. Y., it was decided to hold the next meeting in that village on the evening of April 17. Refreshments were served by courtesy of the Eastchester Fire Department after the meeting.

Metropolitan Fire Associates Dine

The annual dinner of the Metropolitan Fire Associates was held in the University Club in Boston, Mass., on the evening of March 25. The speakers were Chief Henry A. Fox, of the Boston Fire Department; State Fire Marshal Stephen C. Garrity, of Massachusetts; Percy C. Charnock, of the New England Insurance Exchange; Ex-Fire Commissioner Theodore A. Glynn, of Boston, who represented Governor James M. Curley; and William Tripp, Junior Cadet Engineer of the Ward Liner "Morro Castle," when that vessel burned off the New Jersey coast last September. President John Good, of the Fire Associates, directed the proceedings.

HARRY BELKNAP.

The salvage car of the Mason City, Ia., Fire Department, described on page 105 of the March, 1935, issue of FIRE ENGINEERING, was built by the General Fire Truck Corporation, St. Louis, Mo.

Memphis, Tenn., has reduced its fire losses to the lowest since 1912. Last year was Chief Irky Klinke's first year as head of the department. The reduction in fire loss was also accompanied by a reduction in the number of fires, and the number of fire calls.

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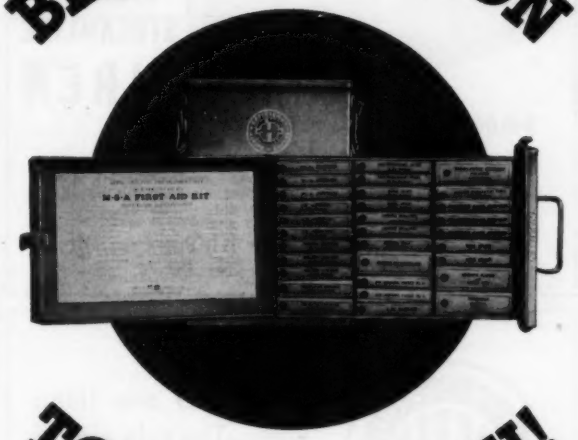

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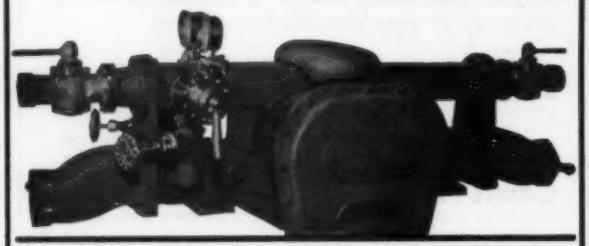

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Catalog Service

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Refer to Page 165

FALSE ALARMS

Courtesy of Life

"You're letting this thing get you, Jackson. If it rings, it rings, that's all."

BIG MOMENT

An equipment salesman tells of an unusual experience he had. Since orders were not as plentiful as they were many years ago, he had to make more calls and had to figure on closer train connections.

He met with the Council of one village, and then had to leave early the next morning to make train connections to his next stop. He left instructions with the callboy to call him at six in the morning, so that he would have plenty of time to pack.

Promptly at the appointed hour, the boy opened the bedroom door, strode across to the bed of the sleeper, seized him by the collar of his pajamas and said in a hoarse voice:

"Yer hour has come, sir."

The trouble with owning your own home is that though you can laugh at landlords, you can't even smile at the tax collectors.

PHYSICAL REASONS

At the anniversary dinner of the department, many of the city's official family were present. Before the dinner started, each of the more important guests was introduced and the people present arose.

A waiter noticed that a fireman who had been assigned to a corner table was still standing after all had been introduced. In a friendly way, he said:

"Why don't you sit down? You have shown your good manners long enough."

"It ain't good manners, it's a boil."

Nowadays it takes all kinds of people to make the drinks at a party.

RELEASED HOLD

The Lieutenant's wife is another woman who will never learn to drive a car. He gave her a few lessons and then decided he was wasting his efforts. His friend asked why the lessons had stopped.

"We had an accident," he explained.

"What happened?"

"I told her to release her clutch and she let go of the steering wheel."

An idiot is the motorist who crashes into the rear end of your car when you stop suddenly without signalling.

THERE'S THE RUB

An Illinois fireman proved to his comrades that "he sure was hot," and broke both legs in the demonstration.

He carried a pocketful of matches in his pocket. As he was sliding down the brass pole, in the central station, the friction of his body against the pole ignited the matches, and flames shot out from his shirt. This excited him so that he released his grip on the pole and dropped twelve feet to a concrete floor.

The easiest way to put miles on a new car is to look for a parking space.

STILL POTENT

Judging from the amount of liquid refreshments consumed, the smoker was a success. "One of the boys" went stumbling to his home, feeling in the best of spirits.

He climbed the stairs to his room singing, "The old gray mare ain't what she used to be—"

He was interrupted by a very peeved wife who dryly suggested, "No, but the white mule still is."

The human animal is the only one that can be skinned twice.

—Drawn by "Art" Espey

"Well! Can I help it if six of your firemen missed an alarm? Why don't you pull your own shades down, Captain?"

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for equipment or supplies make your wants known through FIRE ENGINEERING. More bidders mean more competition and better satisfaction.

New England Signal Men Meet

Fifty members of the New England Municipal Signal Association gathered at the Norwich Inn, Norwich, Conn., on March 13 and 14 for the two-day spring meeting. Frank F. Veit, Superintendent of Fire Alarms, Stamford, Conn., presided. Due to the absence of Mayor Edward G. Moran, Alderman Abraham W. Silverberg welcomed the gathering and expressed the pride which residents of Norwich feel because of the efficiency of the Fire Department under the direction of Chief Henry R. Taft.

A brief business session was held at which Secretary-Treasurer Alfred C. Ames, Providence, R. I., gave his report of the progress made by the association since it was organized. On the afternoon of the first day's session there was a general discussion on the report of the Joint Pole Committee. A demonstration on shunt type box and system was given by Chief Engineer Frank R. Bridges, of the Gamewell Company and Joseph Siddall, Secretary of the New Jersey Municipal Signal Association. This was followed by a general discussion.

After the business session of the second day the members accepted an invitation to inspect the equipment of the U. S. Submarine Base. Commander W. H. Hass, U. S. N., escorted the visiting party. Chief Henry R. Taft, Norwich, was highly complimented by the entire membership for the manner in which the two-day session was conducted. Russell A. Glenn of Bridgeport, assisted Chief Taft on the entertainment committee.

It was announced that the New England Association will meet with the New York and New Jersey associations in June at Poughkeepsie, N. Y.

The officers of the Association are Frank F. Veit, Stamford, Conn., President; Oliver Hawley, Athol, Mass., First Vice-President; A. L. Pierce, Wallingford, Conn., Second Vice-President; Alfred C. Ames, Providence, R. I., Secretary and Treasurer.

Among those who attended the meeting were:

George Bowen, Boston; R. J. White, Brockton; N. C. Pierce, Norwich, Conn.; J. M. Lussier, Woonsocket, R. I.; G. F. Bain, New York City; L. E. Ellick, Englewood, N. J.; C. W. Zimmer, Meriden, Conn.; G. E. Morley, Boston; L. C. Morris, Bridgeport, Conn.; J. B. Rustic, Boston; A. P. Pierce, Wallingford, Conn.; F. F. Veit, Stamford, Conn.; H. R. Taft, Norwich, Conn.; R. A. Glenn, Bridgeport, Conn.; A. C. Ames, Providence, R. I.; B. F. Habermann, Boston; J. A. McCaw, Manchester, N. H.; H. D. Jones, Boston; F. McGirr, Valley Falls, R. I.; H. T. Smith, East Providence, R. I.; C. L. Mayer, Putnam, Conn.; R. C. Babson, Cambridge, Mass.; P. H. Parker, Boston; E. J. McCarthy, Newton; E. K. Divall, Leominster; A. Senay, Holyoke; H. H. Berry, Springfield; J. J. Needles, Winsted, Conn.; C. F. Galvin, Boston; G. Dawson, Beverly, Mass.; G. L. Fickett, Boston; H. L. Stanton, Norwich, Conn.; E. Peters, Boston; W. H. Greenlaw, Beverly; E. P. Cochran, New Haven, Conn.; F. T. Lewis, Norwich, Conn.; W. S. Howes, Boston; H. W. Beedle, Boston; T. S. Tynam, Boston; F. N. Bradshaw, New Haven, Conn.; T. McWhinney, Essex, Conn.; J. Dibble, Saybrook, Conn.; A. S. Harrington, Saybrook, Conn.; A. N. Tiffany, Jr., Groton, Conn.; F. J. Shannon, Stonington, Conn.; Chas. Killars, Stonington, Conn.; Fire Commissioner Cole, Torrington, Conn.; J. Anderson, Torrington, Conn.; S. C. Baldwin, Milford, Conn.; M. Galvin, Naugatuck, Conn.; W. E. Springsteen, Milford, Conn.

THOMAS F. MAGNER.

Assistant Chief T. J. Fogerty Retires

Assistant Chief Thomas J. Fogerty of the Savannah, Ga., Fire Department, has asked to be retired following advice of his physician. He was a member of the department for forty-three years.

He commanded the three fire companies that were sent to Augusta in 1917 to fight a conflagration there, and he has been credited with having stopped the fire. He was also in charge of companies that were sent to Augusta on another occasion, and to Atlanta.

Chief W. S. Blanton said, "The department is losing one of the best fire fighters and Assistant Chiefs the city has ever had. He is a man who will be hard to replace."

Members of the Savannah department presented him with an overstuffed chair, at a ceremony held in the department headquarters.

D. G. AID.

Adolph Dobke Dead

Adolph Dobke, seventy-five years old, and Secretary of the Fabric Fire Hose Company until he retired on April 15, 1931, died on March 13 at his home in Jersey City, N. J. He was born in New York and went to Jersey City City about fifty years ago. He went with the Fabric Fire Hose Company in 1889. A daughter survives.

Mr. Dobke was a member of the Jersey City Lodge, B. P. O. Elks and other fraternal orders.

The Late A. Dobke

Losses Reduced

Figures issued by the National Board of Fire Underwriters show that fire losses for February, while 25.36 per cent less than for the same months the year previous, are 6.59 per cent greater than the losses for the month of January. For losses in the United States for February, 1935, were $25,081,625.

Fire Chiefs of Rhode Island Meet

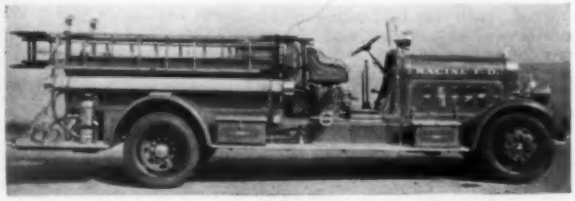
Chief Frank Charlesworth of Providence, R. I., presided at a regular meeting of the Fire Chiefs' Club of Rhode Island held at Providence on March 14.

The club endorsed the Monahan Bill, which if passed by the General Assembly, would give pensions to widows and orphans of firemen killed while on duty. Members voted to hold a clambake in June.

Harry R. Howe, President, Rhode Island State Firemen's League, outlined an educational program of fire prevention for state-wide use, and stated that a committee of the league would make recommendations at the next meeting to be held on April 10 in East Providence. Motion pictures were exhibited.

Dracut, Mass., has voted to purchase a motor pumping engine.

The members of the Scarsdale, N. Y., Fire Department, whose salaries were cut 10 per cent, are to have 5 per cent of this restored. The village budget, which was submitted to Mayor Malcolm Pirnie on March 27 by the Trustees, contains a provision to this effect.



Racine, Wis., Adds 1,000-Gallon Pumper to Department

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13 Battery Jars
14 Battery Zincs for Fire Alarm Batteries
15 Bells, Fire Alarm, Municipal
16 Body Equipments
17 Boxes, Gongs, Reels, Registers, Fire Alarm
18 Brakes, Air
19 Brake Linings
20 Brooms, Fire
21 Building Materials, Fire Retardant
22 Caps, Firemen's
23 Chains, Non-Skid, Fire Apparatus
24 Chassis for Fire Apparatus
25 Chemical Engines and Tanks
26 Chimney Fire Fuses and Compounds
27 City Service Trucks
28 Coats and Suits, Firemen's Quick Hitch
29 Combination Chemical and Hose Cars
30 Cutting and Welding Equipment, Blow Torch
31 Cutting and Welding Equipment, Electric
32 Deluge Sets
33 Door Openers, Fire Station, Automatic
34 Electric Light Plants
35 Extinguishers, Calcium Chloride
36 Extinguishers, Carbon Dioxide
37 Extinguishers, Soda-Acid
38 Extinguishers, Carbon Tetrachloride
39 Extinguishers, Foam
40 Extinguishers, Powder
41 Fire Boat Nozzle Equipment
42 Fire Department Supplies, General
43 Fire Exit Devices, Door Opening
44 Fire Alarm Posts
45 Fire Escapes, Portable
46 Fire Escapes, Rigid
47 First Aid Equipment
48 Flare Lights
49 Flashlights, Hand
50 Flood Lighting Equipment (Lamps, Cable, Reels, etc.)
51 Foam Generating Apparatus
52 Foam Liquid for Extinguishers
53 Gas Masks and Respirators
54 Gas and Smoke Helmets
55 Gas and Smoke Generators
56 Goggles, Firemen's
57 Helmets, Metal, etc.
58 Hose Bridges
59 Hose Carts, Reels and Racks
60 Hose Clamps
61 Hose, Fire
62 Hose, Chemical
63 Hose Holders
64 Hose Jackets
65 Hose Standardization Tools
66 Hydrant Draining Pumps
67 Hydrants, Fire
68 Jacks for Fire Trucks
69 Jacks, Shoring and Prying
70 Ladders, Fire
71 Lightning Arresters
72 Motorcycles, Fire Dept. Equipped
73 Nets, Life
74 Nozzles, Pipes and Miscellaneous Brass Goods
75 Packings, Pump
76 Pads, Pole Hole
77 Paints, Fire Resisting
78 Priming Ether, Motor
79 Pumping Cars, Standard
80 Pumping Cars, Foam
81 Pumps, Fire Apparatus
82 Pumps, Fire Service, Stationary
83 Pumps, Portable for Fire Protection
84 Record Books, Fire
85 Relief Valves
86 Reviving Apparatus, Oxygen
87 Rubber Clothing
88 Salvage Covers
89 Searchlights
90 Shingles, Fire Retardant
91 Shirts, Firemen's Special
92 Sirens, Apparatus and Chiefs' Cars
93 Sliding Poles
94 Soda and Acid Chemicals
95 Spark Plugs, Fire Apparatus and Motorcycles
96 Squad and other Auxiliary Cars
97 Sprinkler Head Shut-Offs
98 Sprinkler Supervisory Service
99 Sprinkler Systems, Automatic, Foam
100 Sprinkler Systems, Automatic, Water
101 Steam Fire Engines
102 Syphons, Water
103 Tarpaulins and Fire Blankets
104 Tetrachloride Chemicals
105 Thawing Equipment, Hydrant
106 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid
107 Tractors
108 Traffic Clearing Systems
109 Triple Combination Pumping Cars
110 Uniforms
111 Water Towers
112 Wheels, Cushion
113 Whistles, Fire Alarm, Compressed Air
114 Whistles, Fire Alarm, Steam
115 Whistles, Fire Apparatus
116 Wrecking Trucks

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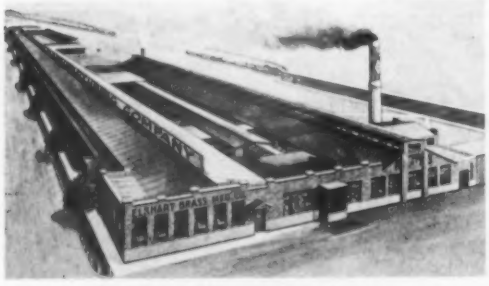

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